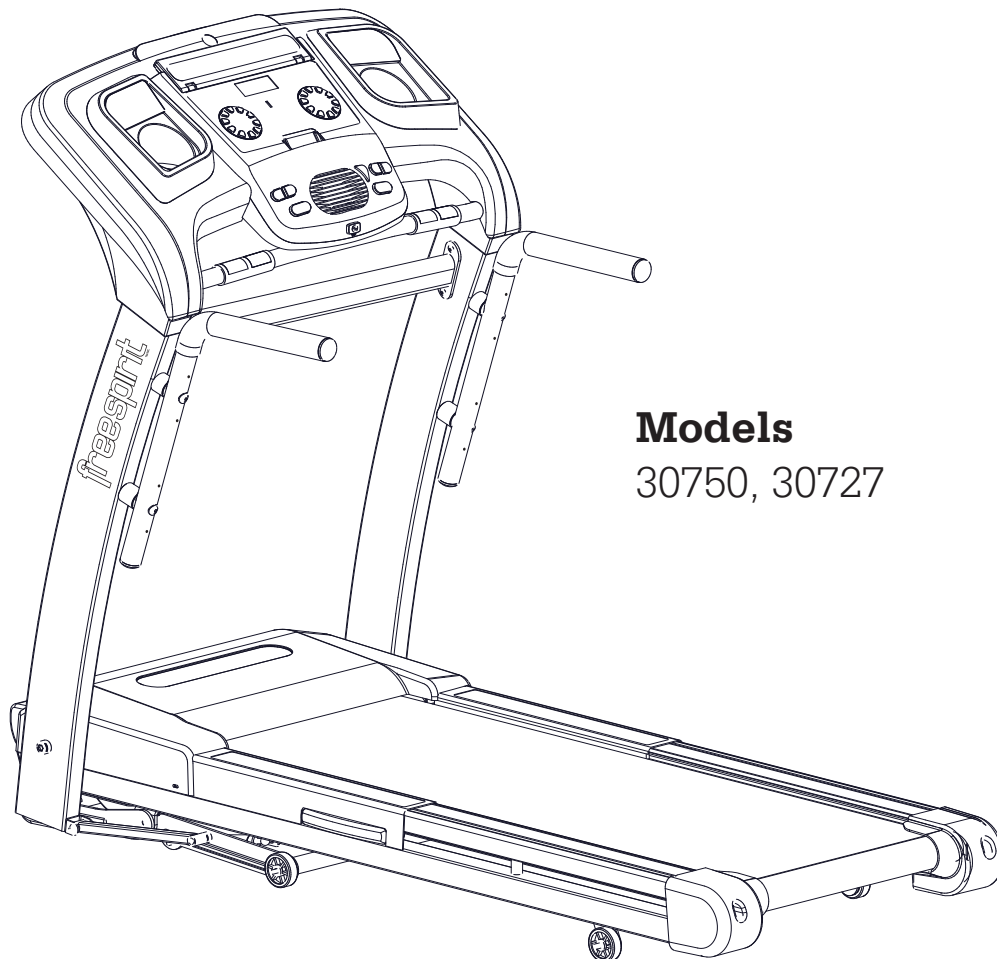


Sears Canada Service Manual

Treadmills



Models

30750, 30727

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Safety Instructions

>> Treadmills

WARNING STATEMENTS INDICATE A PARTICULARLY DANGEROUS ACTIVITY.

YOU SHOULD BE EXTREMELY CAUTIOUS WHEN DOING THE FOLLOWING:

- Removing power from the treadmill, or removing the power cord from the wall outlet. Always ensure that the treadmill is unplugged from the wall outlet when you inspect or adjust the treadmill, or when you isolate, remove, or replace a treadmill component.
- Removing the motor cover exposes high voltage components and potentially dangerous machinery. Exercise extreme caution when you perform maintenance procedures with the motor cover removed.
- During service operations you will be very close to moving machinery and high voltage components. When you perform maintenance procedures with the hood removed, remove jewelry (especially from ears and neck), tie up long hair, remove neckties, and do not wear loose clothing.
- When the treadmill is operating, the capacitor will hold a lethal amount of charge. Do not touch the capacitor as serious injury or death might result.
- When the treadmill is turned off and the power cord is removed from the wall outlet, the capacitor will hold voltage for 30-60 seconds. Allow the capacitor to discharge for a period of one minute before you touch or work near the capacitor. Do not attempt to discharge the capacitor by any other means.
- Exercise caution when touching any wire or electrical component during treadmill operation.
- When it is necessary to lift the treadmill, ensure that the treadmill has adequate support. Do not lift the treadmill by the front.

SAFETY GUIDELINES YOU SHOULD KNOW AND FOLLOW INCLUDE:

- Read the owner's manual and follow all operation instructions.
- Operate the treadmill on a solid, level surface. Locate the rear of the treadmill at least four feet from walls or furniture. Keep the area behind the treadmill clear.
- Visually check the treadmill before beginning service or maintenance operations. If it is not completely assembled or is damaged in any way, exercise extreme caution while operating and checking the treadmill.
- When operating the treadmill, do not wear loose clothing. Do not wear shoes with heels or leather soles. Check the soles of your shoes and remove any embedded stones. Tie long hair back.
- Use care when getting on or off the treadmill. Use the handrails whenever possible. Do not get on or off the treadmill when the running belt is moving.
- Before starting the running belt, straddle the belt by placing your feet firmly on the guide rails of the treadmill. You should also step off the belt and onto the guide rails of the treadmill after turning off the running belt.
- Do not rock the unit. Do not stand or climb on the handrails, electronic console, or motor cover.
- Do not set anything on the handrails, electronic console, or motor cover. Never place liquids on any part of the treadmill.
- To prevent electrical shock, keep all electrical components, such as the drive motor, power cord, and circuit breaker away from water and other liquids.
- Do not use accessory attachments that are not recommended by the manufacturer-such attachments might cause injuries.
- Turn off the treadmill when adjusting or working near the rear roller. Do not make any adjustments to the running belt when someone is standing on the machine.
- Keep all loose items away from the treadmill running surface. A treadmill running belt will not stop immediately if an object becomes caught in the belt or rollers.

WARNING

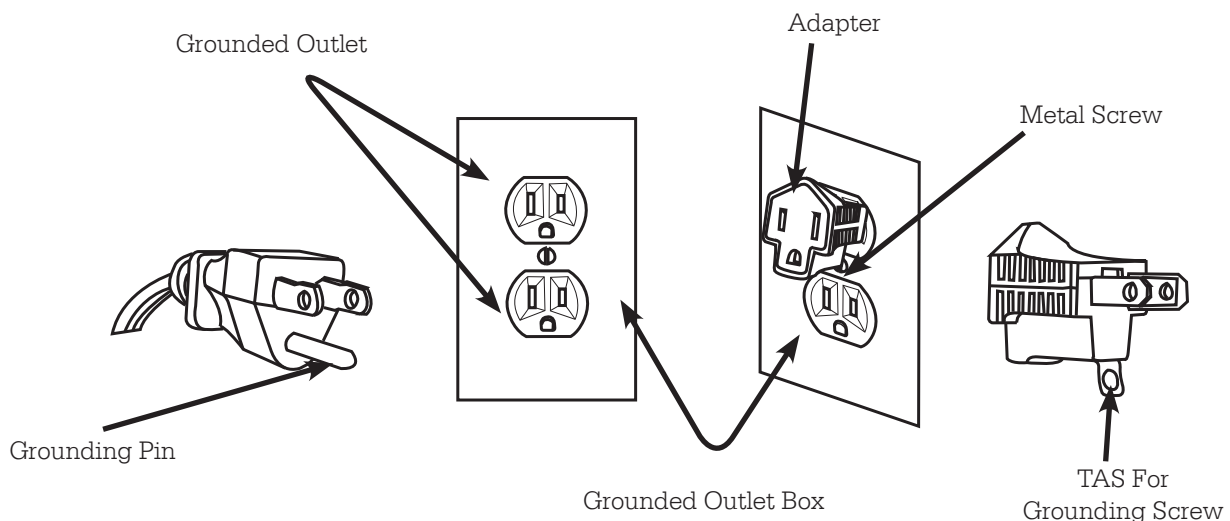
Connect this unit to a properly grounded, **dedicated 20-amp outlet** only. See grounding instructions.

GROUNDING INSTRUCTIONS

This product must be grounded. If a treadmill should malfunction or breakdown, grounding provides a path of least resistance for electrical current to reduce the risk of electrical shock. This product 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 local codes and ordinances.

WARNING

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician 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 in the outlet; have a proper outlet installed by a qualified electrician.



SAFETY TIPS

- Never use the treadmill before securing the safety tether clip to your clothing.
- If you experience chest pains, nausea, dizziness, or shortness of breath, stop exercising immediately and consult your physician before continuing.
- Do not wear clothes that might catch on any part of the treadmill.
- Keep power cord away from heated surfaces.
- Keep children off of treadmill at all times.
- Do not use treadmill outdoors.
- Unplug treadmill before moving it.
- Do not remove the treadmill motor cover or roller covers.
- Treadmill should be plugged into a dedicated 20 amp circuit for optimal performance.

>> Recommended Tools and Equipment

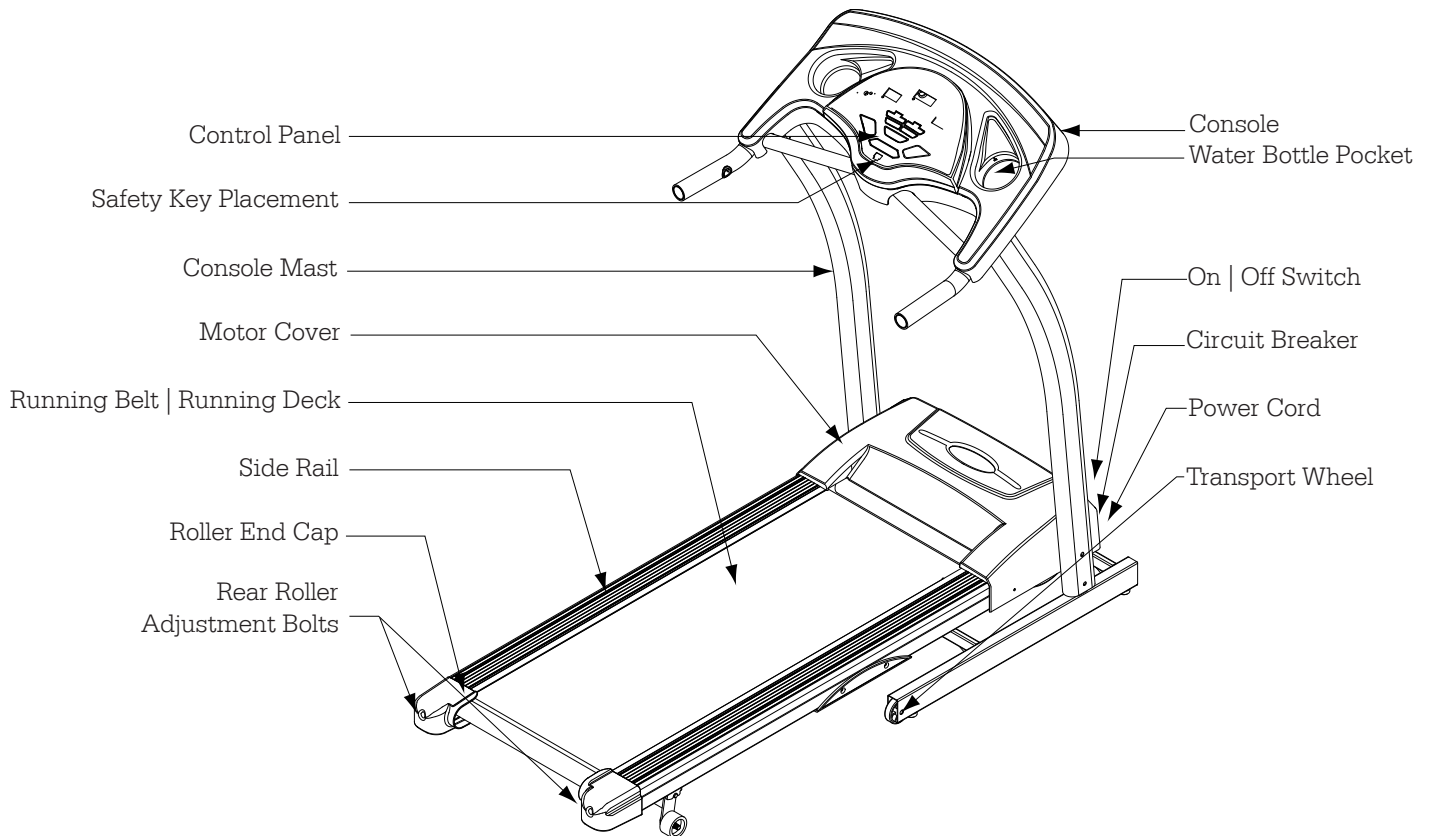
The following list is a summary of the tools and equipment required by the procedures in this manual.

Tools are not supplied by Horizon Fitness.

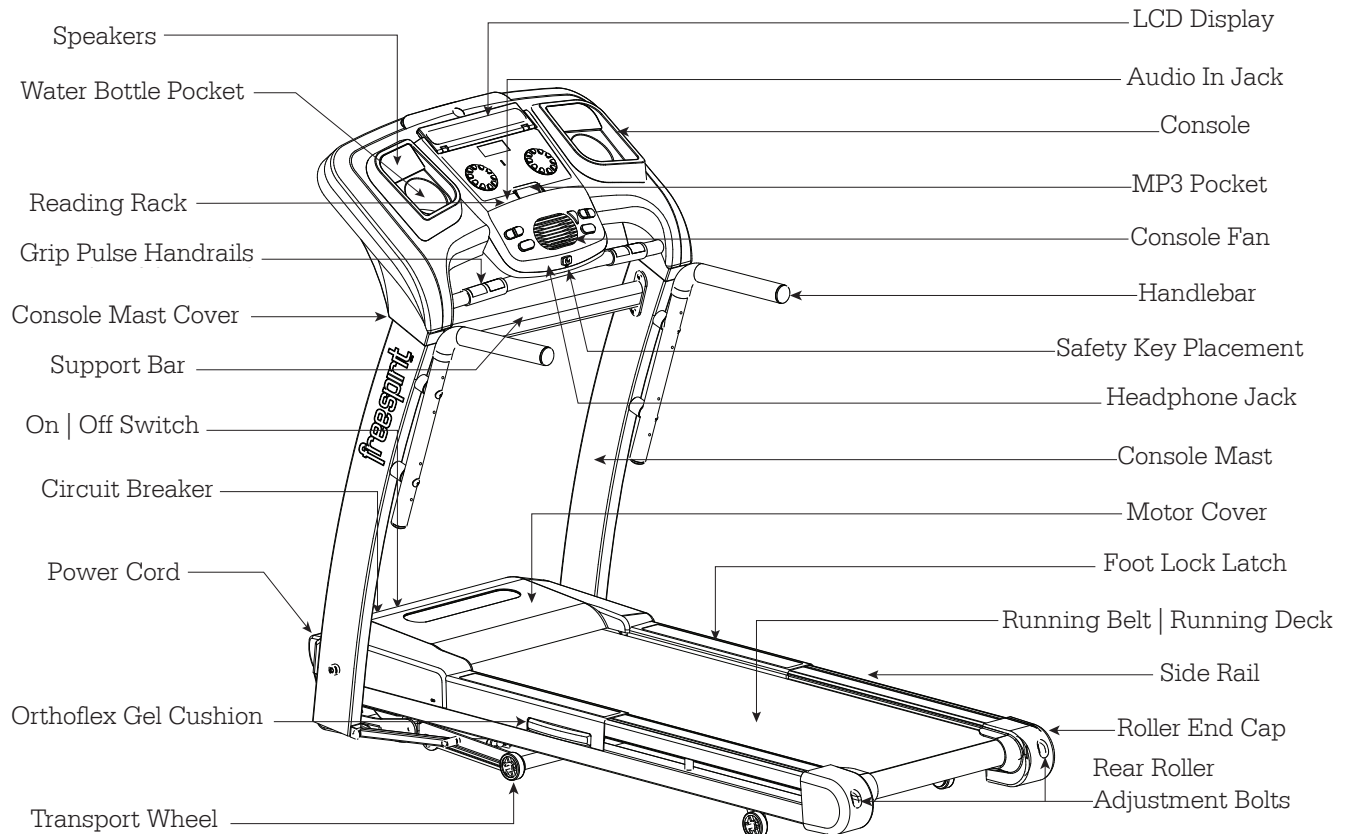
- Phillips screwdrivers
- Anti-static wrist strap (when handling electronic parts)
- Flat-head screwdrivers
- Digital multi-meter
- Drive belt tension gauge
- Allen wrench set (Metric)
- Open-end wrenches of assorted sizes (Metric)
- Clamp-on amp meter
- 1/2" drive ratchet and sockets of assorted sizes
- Blue Thread Lock
- Cable ties
- * Motor commutator stone
- Needle nose pliers
- Damp cloth
- Rubber mallet
- Hammer
- Drop cloth
- Ruler
- Snap ring pliers
- Wire cutters

* Available through Horizon Fitness at Cost.

>> Treadmill Parts Diagram | 30750



>> Treadmill Parts Diagram | 30727



Maintenance

>> Treadmill Preventative Maintenance Procedures

Cleanliness of your treadmill and its operation environment will keep maintenance problems and service calls to a minimum. For this reason, we recommend that the following preventive maintenance schedule be followed.

AFTER EACH USE (DAILY)

Clean and inspect, following these steps:

- Turn off the treadmill with the on/off switch, then unplug the power cord at the wall outlet.
- Wipe down the running belt, deck, motor cover, and console casing with a damp cloth. Never use solvents, as they can cause damage to the treadmill.
- Inspect the power cord. If the power cord is damaged, contact Horizon Fitness.
- Make sure the power cord is not underneath the treadmill or in any other area where it can become pinched or cut.
- Check the tension and alignment of the running belt. Make sure that the treadmill belt will not damage any other components on the treadmill by being misaligned.

EVERY WEEK

Clean underneath the treadmill, following these steps:

- Turn off the treadmill with the on/off switch, then unplug the power cord at the wall outlet.
- Fold the treadmill into the upright position, making sure that the lock latch is secure.
- Move the treadmill to a remote location.
- Wipe or vacuum any dust particles or other objects that may have accumulated underneath the treadmill.
- Return the treadmill to its previous position.

EVERY MONTH - IMPORTANT!

- Turn off the treadmill with the on/off switch, then unplug the power cord at the wall outlet.
- Inspect all assembly bolts of the machine for proper tightness.
- Turn off the treadmill and wait 60 seconds.
- Remove the motor cover. Wait until ALL LED lights turn off.
- Clean the motor and lower board area to eliminate any lint or dust particles that may have accumulated. Failure to do so may result in premature failure of key electrical components.
- Vacuum and wipe down the belt with a damp cloth. Vacuum any black/white particles that may accumulate around the unit. These particles may accumulate from normal treadmill use.

Note: Maintenance is NOT covered under manufacturer's warranty.

Maintenance

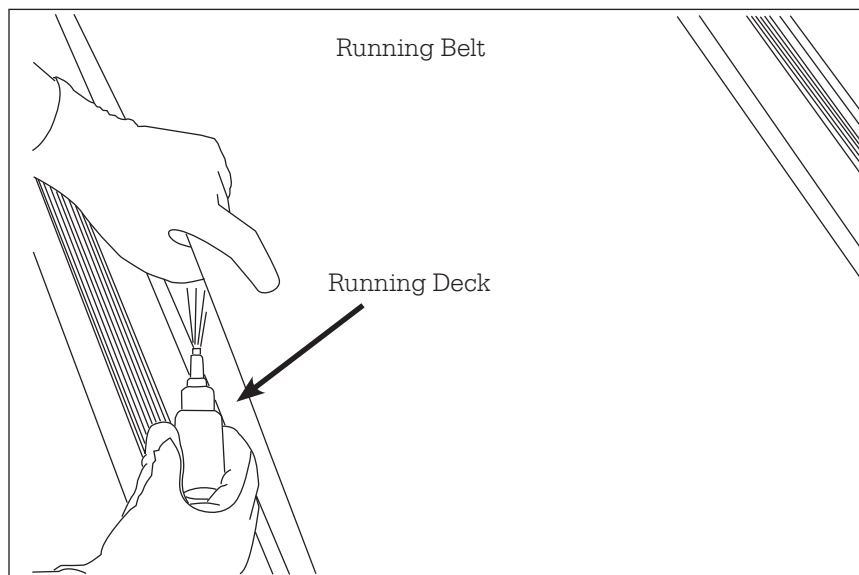
>> Treadmill Lubrication | 30727 Only

EVERY 6 MONTHS OR 150 MILES

It is necessary to lubricate your treadmill running deck every six months or 150 miles to maintain optimal performance of your treadmill. Once the treadmill reaches 150 miles, the console will prompt you to lubricate the treadmill. Only use lubricant provided by Horizon Fitness!

- Turn off the treadmill with the on/off switch, then unplug the power cord at the wall outlet.
- Loosen both the rear roller bolts. (For best results, place two removable marks on both sides of the frame and note roller position). Once the belt is loosened, take the bottle of lubricant and apply it to the entire top surface of the running deck. Tighten both rear roller bolts (matching up the marks for proper position) to original position. After you have applied lubricant, plug in the power cord, insert the safety key, start the treadmill and walk on the belt for two minutes to spread the lubricant.
- Lubricate the air shocks with Teflon based spray.
- Once lubrication is complete, reset the console by pressing and holding 'STOP' and Speed (▲) buttons for 5 seconds.

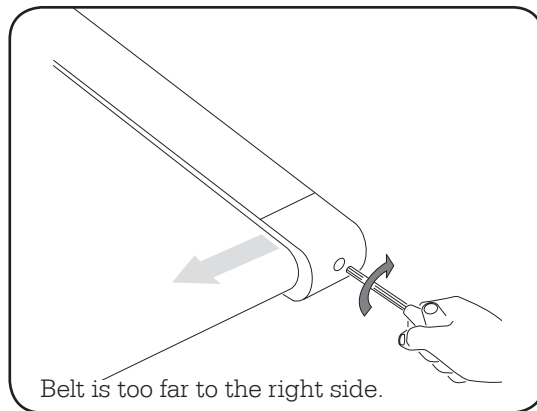
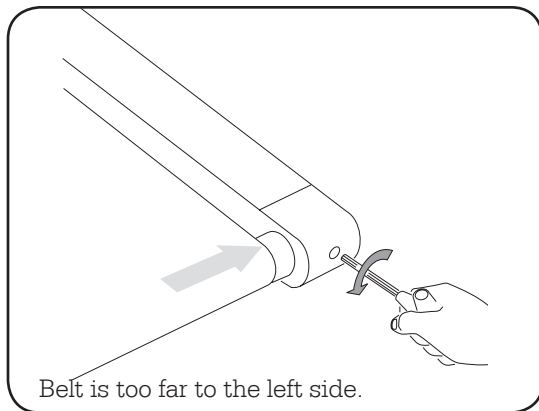
LUBRICATION



Maintenance

>> Tensioning and Aligning the Running Belt

If you can feel a slipping sensation when running on the treadmill, the running belt must be tightened. In most cases, the belt has stretched from use, causing the belt to slip. This is a normal and common adjustment. Make sure that the unit is turned off and not running. To eliminate this slipping, tension both the rear roller bolts with the appropriate sized Allen wrench, turning both the left and right bolt 1/4 TURN as shown below. Try the treadmill again to check for slipping. Repeat if necessary, but NEVER TURN the roller bolts more than 1/4 turn at a time.



- 1 |** If the running belt moves rapidly to one side when performing the next step, press the Stop button immediately.
 - Turn on the treadmill. With the treadmill speed between 3-4mph, stand behind the treadmill and watch the movement of the running belt. **DO NOT STAND ON THE TREADMILL AND DO NOT TOUCH THE TREADMILL WHILE PERFORMING THIS PROCEDURE.** As you watch the running belt, make sure that the belt runs without moving from one side to the other and that the belt is centered between the side rails.

- 2 |** If the running belt is not tracking properly, follow the procedures below:
 - If the running belt tracks to the left, turn the left roller bolt clockwise 1/4 of a turn, keeping the belt tension in mind. Over-tightening the running belt may cause damage to the running belt and roller bearings.
 - If the running belt tracks to the right, turn the right roller bolt clockwise 1/4 of a turn, keeping the belt tension in mind. Over-tightening the running belt may cause damage to the running belt and roller bearings.

>> Proper Heart Rate Usage

HAND GRIPS | THUMB PULSE

Place the palm of your hands directly on the grip pulse handlebars. Both hands must grip the bars for your heart rate to register. It takes 5 consecutive heartbeats (15-20 seconds) for your heart rate to register accurately. When gripping the pulse handlebars, do not grip tightly. Holding the grips tightly may elevate your blood pressure. Keep a loose, cupping hold. You may experience an erratic readout if consistently holding the grip pulse handlebars. Make sure to clean the pulse sensors to ensure proper contact can be maintained.

TROUBLESHOOTING-HEART RATE

Check your exercise environment for sources of interference such as fluorescent lights, computers, underground fencing, home security systems or appliances containing large motors. These items may cause erratic heart rate readouts.

You may experience an erratic readout under the following conditions:

- Gripping the heart rate handlebars too tight. Try to maintain moderate pressure while holding onto the heart rate handlebars.
- Constant movement and vibration due to constantly holding the heart rate handlebars while exercising. If you are receiving erratic heart rate readouts, try to only hold the grips long enough to monitor your heart rate.
- When you are breathing heavily during a workout.
- When your hands are constricted by wearing a ring.
- When your hands are dry or cold. Try to moisten your palms by rubbing them together to warm them.
- Anyone with heavy arrhythmia.
- Anyone with arteriosclerosis or peripheral circulation disorder.
- Anyone whose skin on the measuring palm is especially thick.

>> Section Two

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>> Horizon Fitness “5-Step” Treadmill Diagnostic Process

IMPORTANT

The following steps are provided as routine checkpoints when diagnosing problems on a Horizon Fitness treadmill. If followed correctly, these checkpoints should help diagnose the majority of problems that may be encountered.

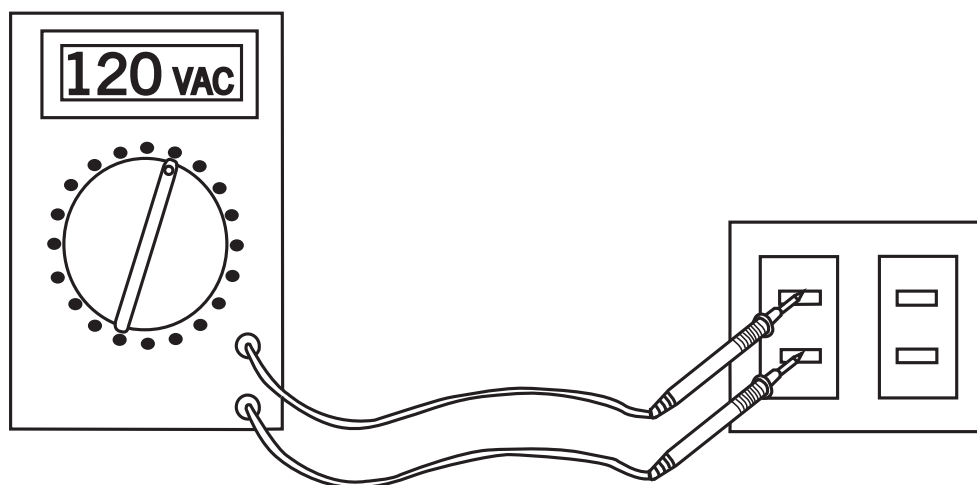
Step 1 | Proper supplying power to treadmill.

- Make sure the treadmill is not on an extension cord, surge protector or GFCI circuit. Extension cords and surge protectors create energy loss, which prevents proper voltage from being supplied to the treadmill.
- Make sure the treadmill is on a dedicated circuit. Horizon Fitness recommends a 20 amp dedicated circuit, but a 15 amp dedicated circuit may be sufficient.
- Make sure that proper voltage is being supplied from the wall outlet.

WARNING

Hazardous voltages will be tested in the following procedure. Exercise extreme caution when performing these procedures. Do not connect or disconnect any wiring, connectors, or other components with the power applied to the treadmill.

- Disconnect the treadmill power cord from the wall outlet. Using an AC voltmeter, verify that the proper AC voltage is present at the wall outlet. Nominal 120 volts AC may vary between approximately 105 volts AC and 135 volts AC. If the AC voltage is missing or incorrect, check the AC service or consult an electrician.

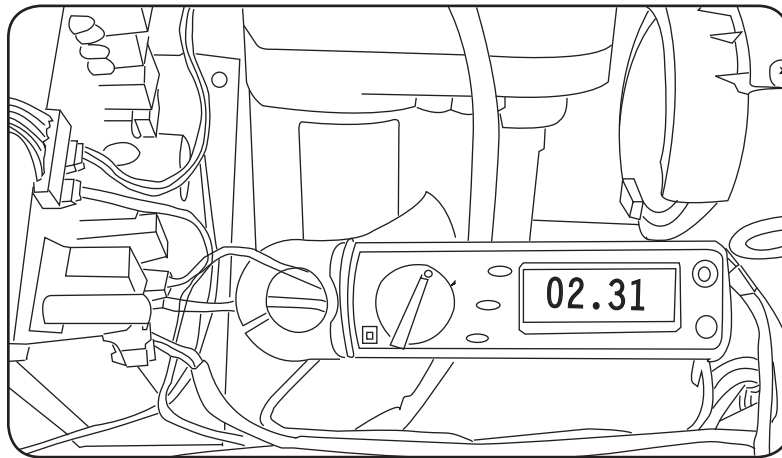


Step 2 | Proper Wiring

- Verify that all wires are secure and attached in the correct position.
- Verify that there aren't any pinches or cuts in any of the wires, especially the console cable connecting from the motor control board to the upper board. Replace any wires that are pinched or cut.

Step 3 | Proper Motor Function

- Verify that the treadmill is properly lubricated and drive motor is operating at the proper amperage rating. To verify the current draw, place a clamp meter around the red motor wire.



- Remove the brush covers on the drive motor and inspect the brushes and the motor commutator for any uneven wear. If the surface of the motor brush is pitted, rough, has burn marks, or the commutator has a black residue on it, replace the motor.

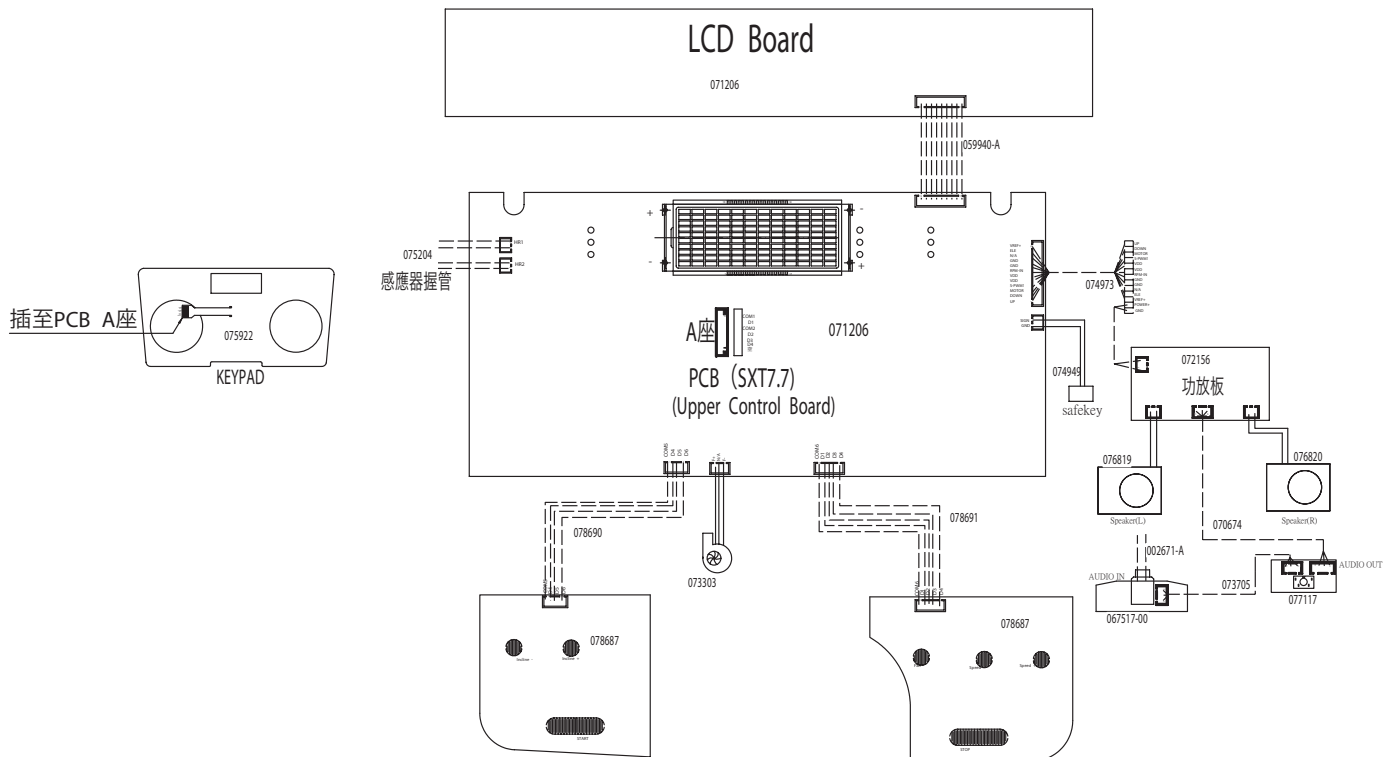
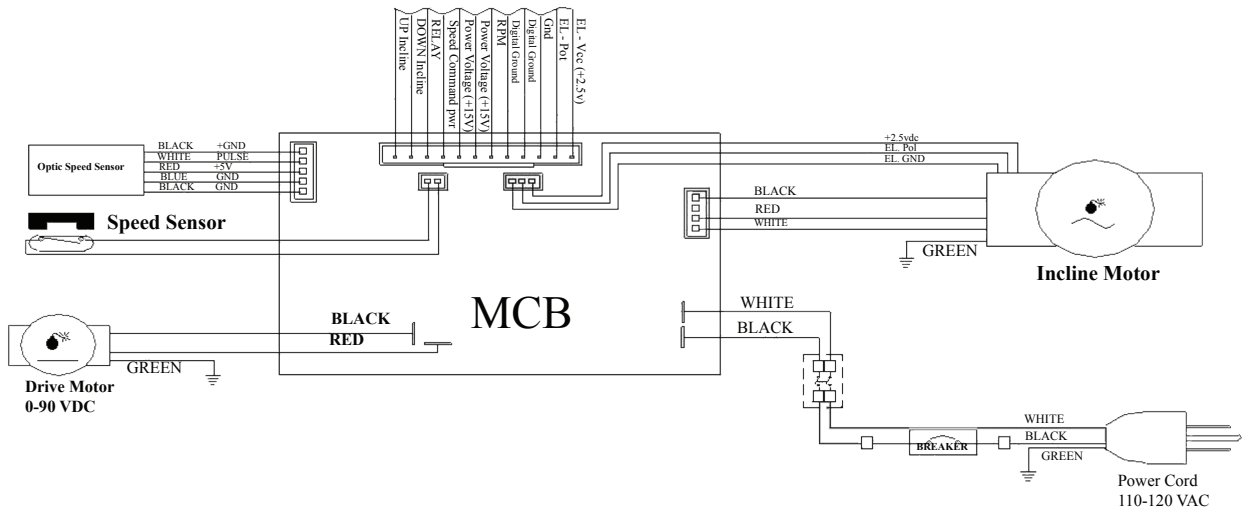
Step 4 | Proper Speed Calibration

- To ensure proper belt speed and proper calibration use engineering mode to verify that machine is running in MPH not KM.
- Auto-calibrate the machine from engineering mode if the belt speed is erratic or the belt speed does not correspond to what is displayed on the console.

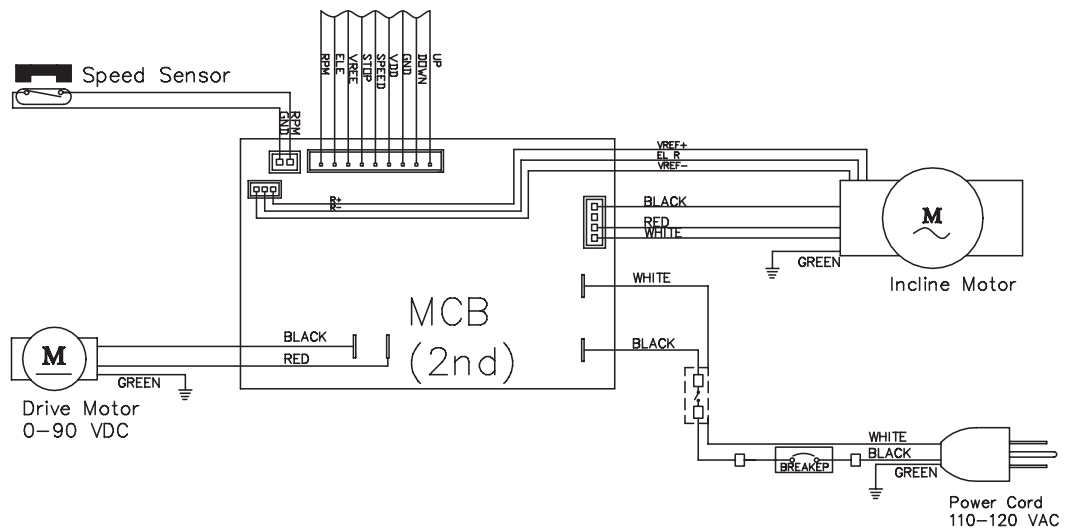
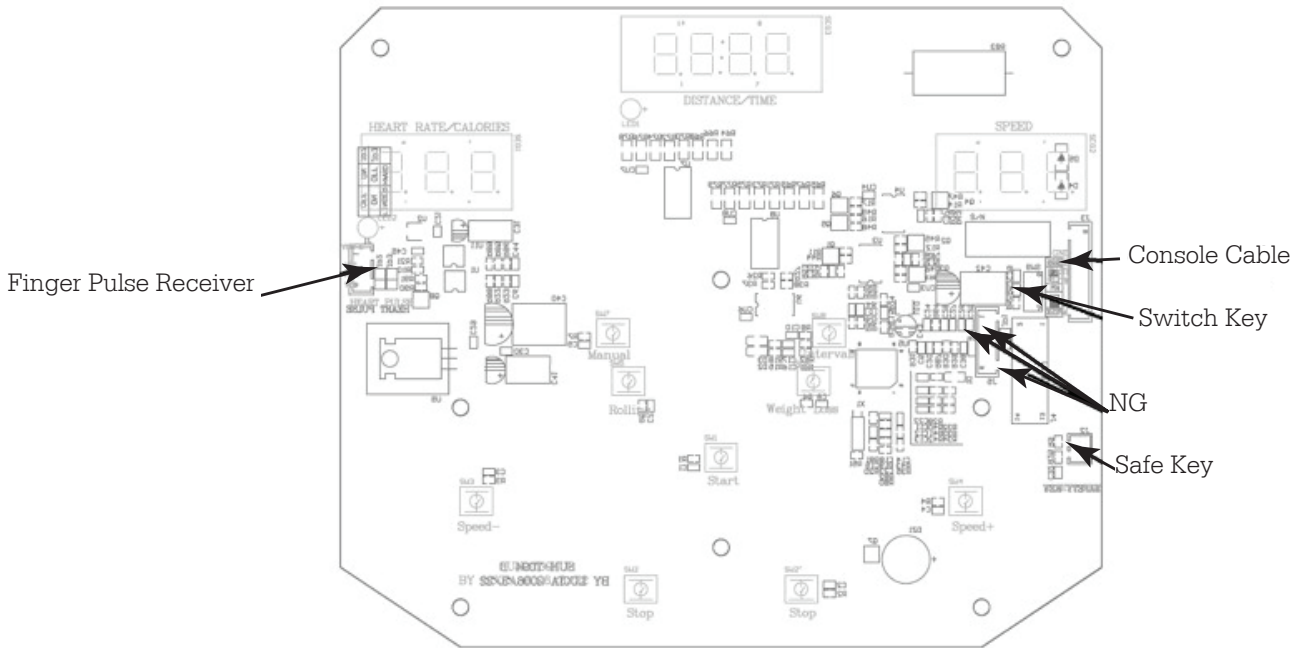
Step 5 | Voltage Checkpoints

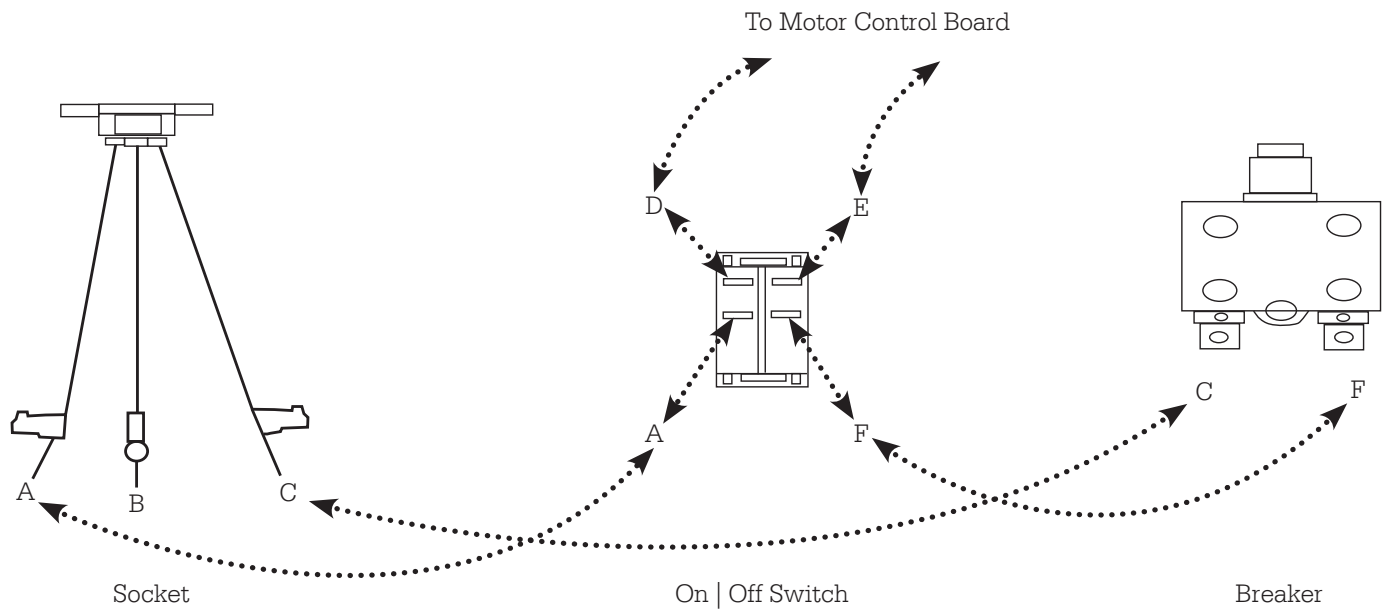
- Verify that proper voltage is being transferred through the console cable.

>> Digital Drive Wiring Diagram (30727)



>> Wiring Diagram (30750)



>> Power Source Wiring Diagram

A – Socket wire to breaker or on/off switch.

Wire Length will determine connection point.

B – Ground

C – Socket wire to breaker or on/off switch.

Wire Length will determine connection point.

D – On/Off switch to motor control board.

E – On/Off switch to motor control board.

F – On/Off switch to breaker.

Note: Wires A & C are interchangeable.

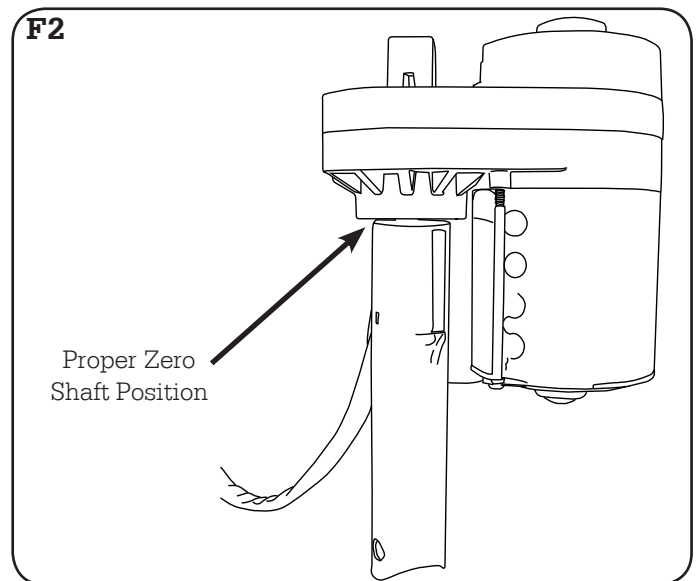
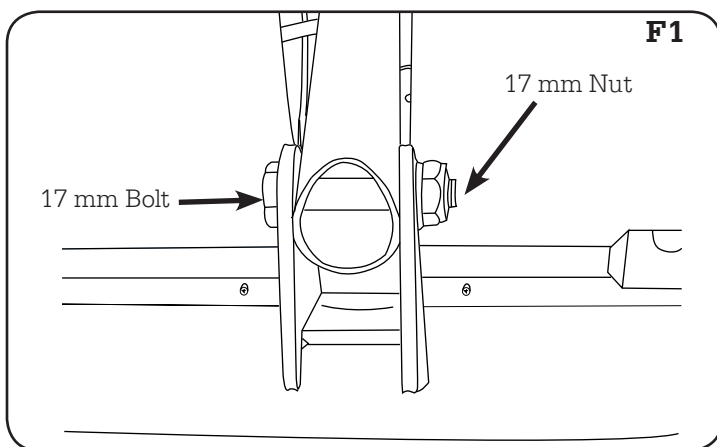
>> Resetting the Incline Motor after replacing the Motor Control Board

Tools Required:

- Phillips Screwdriver
- 17mm Socket
- 17mm Combination Wrench

Procedure:

- 1 | Turn off power to the treadmill and unplug power cord from wall outlet.
- 2 | Replace the Motor Control Board.
- 3 | Fold treadmill into locked position.
- 4 | Undo bolt that attaches the elevation tube to the bottom of the machine (**F1**).



- 5 | Power up the machine and let the incline spin freely in the tube until it reaches its “zero” position, and then turn power off.
- 6 | Spin shaft manually until it is almost flush with the incline motor casing and only about 1 thread is visible (**F2**).
- 7 | Reinsert bolt and power up the machine.
- 8 | Test the incline function and calibrate the unit.

>> No Motor Movement Voltage Checkpoints

Upper Board Checkpoints

Procedures:

Using a dc volt meter (if non-auto ranging set for the 20vdc range), test the voltage at the grey and again at the white console cable connections using the yellow, orange or red wires as ground. Two tests are to be performed; test once with power on before the treadmill is started and again after Start is pressed.

Desired Results:

The voltage charts contain typical desired results on a fully functional system. A variance from the norm would indicate a defective component.

Checkpoint	Voltage Before Start	Voltage After Start
Console Cable Grey to Yellow (Gnd)	0.0 vdc	0.3 +/- .3 vdc, increases as speed increases. (as shown on console)
Console Cable White to Yellow (Gnd)	4.3 +/- .3 vdc	0.0 vdc

Lower Board Checkpoints

Console Cable Connection

Procedures:

Using a dc volt meter (if non-auto ranging set for the 20vdc range), test the voltage at the grey and again at the white console cable connections using the yellow, orange or red wires as ground. Two tests are to be performed; test once with power on before the treadmill is started and again after Start is pressed. Note: this is the same procedure as the upper board console cable connection. If results vary from the upper board, the console cable is the likely cause and a continuity check should be performed.

Desired Results:

The voltage charts contain typical desired results on a fully functional system. A variance from the norm would indicate a defective component.

Checkpoint	Voltage Before Start	Volatge After Start
Console Cable Grey to Yellow (Gnd)	0.0 vdc	0.3 vdc, increases as speed increases. (as shown on console)
Console Cable White to Yellow (Gnd)	4.3 vdc	0.0 vdc
Note: 2.75 Hp motors and higher: the reading on the console cable -white to yellow (gnd) is 1.6 + or - .3vdc		

Digital Speed Sensor Connection

Procedures:

Using a dc volt meter (if non-auto ranging set for the 20vdc range); test the voltage at the red wire and again at the yellow wire using the blue, black or black as ground. The yellow wire should be measure twice, once with the optic speed sensor obstructed and once not obstructed. This can be done by slowly turning the motor and aligning the tines or open spaces of the optic disk with the sensor.

Desired Results:

The voltage charts contain typical desired results on a fully functional system. A variance from the norm would indicate a defective component.

Checkpoint	Voltage With Sensor Obstructed	Voltage With Sensor Not Obstructed
Yellow Digital Speed Sensor	5.0 +/- 0.4 vdc	0.3 vdc
Red Digital Speed Sensor	5.0 +/- 0.4 vdc	5.0 +/- 0.4 vdc

>> No Motor Movement Voltage Checkpoints Continued

Drive Motor Connection

Procedures:

Using a dc volt meter (if non-auto ranging set for the 200vdc range), test the voltage at the red and black motor leads with the motor still attached.

Note: This should be tested after the console cable and optic sensor points because they can give the same results as a defective lower board.

Note: A non-functional system may still have a voltage present with no motor attached. For accurate results, the motor must be attached when the voltage is checked.

Desired Results:

The voltage charts contain typical desired results on a fully functional system. A variance from the norm would indicate a defective component.

Checkpoint	Voltage Before Start	Voltage After Start @ 0.5mph	Voltage After Start @ 10.0mph
Across Motor Out, No Motor Attached	0.0-22.5 vdc	0.0-22.5 vdc	0.0-22.5 vdc
Across Motor Out, W/ Motor Attached	0.0 vdc	2.5- 0 vdc	80-100.0 vdc

Drive Motor Checkpoints

Procedures:

Unplug the motor from the lower board. Using a dc volt meter (if non-auto ranging set for the 20vdc range), attach volt meter leads directly into the motor leads and turn the running belt.

Desired Results:

The motor should generate 5-15 vdc depending on the speed it is turned.

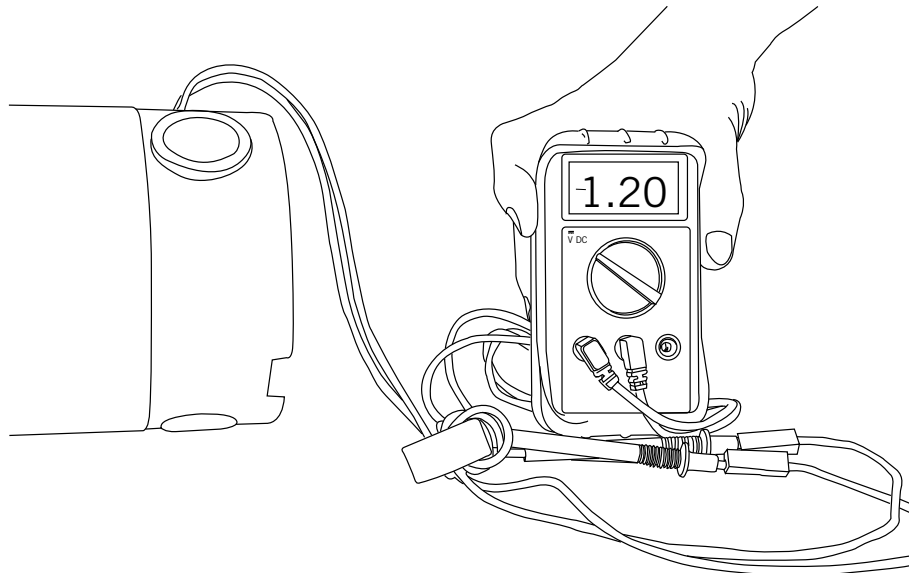
Procedures:

Unplug the motor from the lower board. Using an ohm meter (if non-auto ranging set for the 200 ohm range), attach ohm meter leads directly into the motor leads.

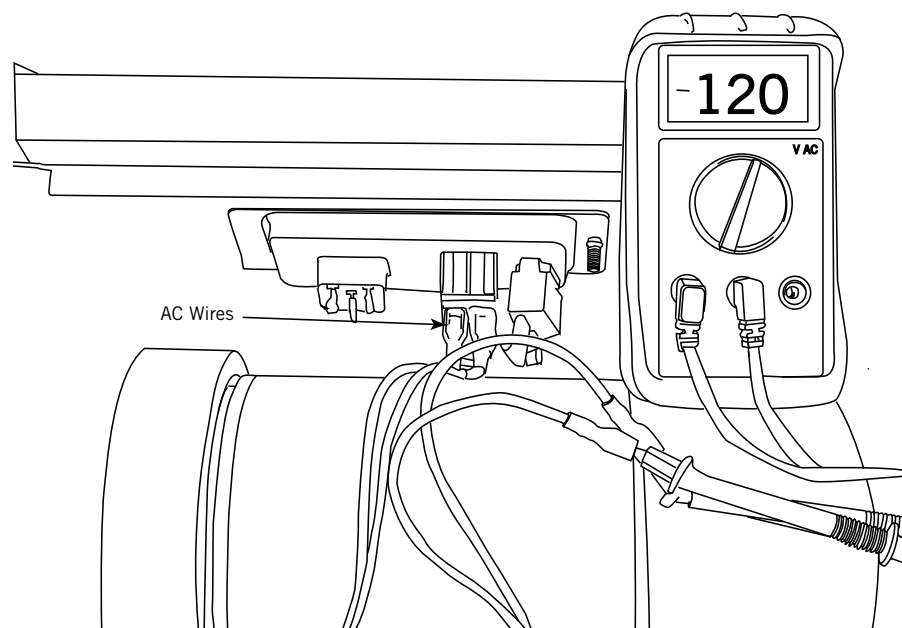
Desired Results:

The motor should read approximately 1.0-1.5 ohms.

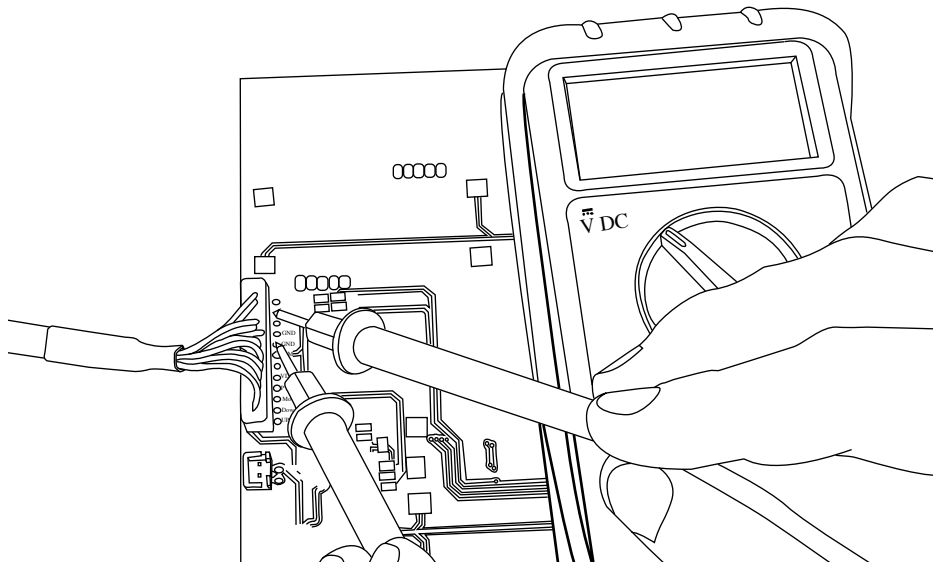
>> Motor Voltage Check | Spin motor flywheel to produce voltage



>> AC Wire Voltage Check



>> Console Cable Voltage Check

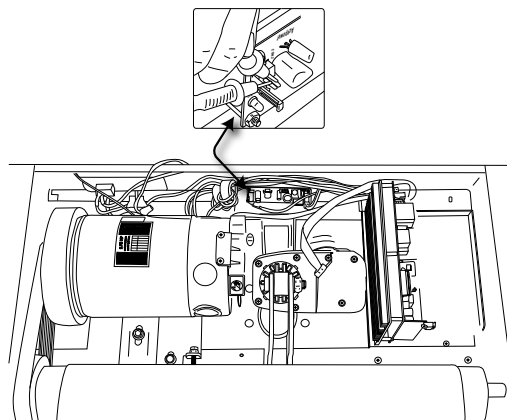


To check the voltage of a specific function (i.e. elevation, motor control, etc), place the negative lead of your multi-meter on pin B3, B4 or B5, and place the positive lead on the desired pin. Follow the voltage charts on p23 (9wire) and p24 (12wire).

Note | 1: Wire colors are subject to change.

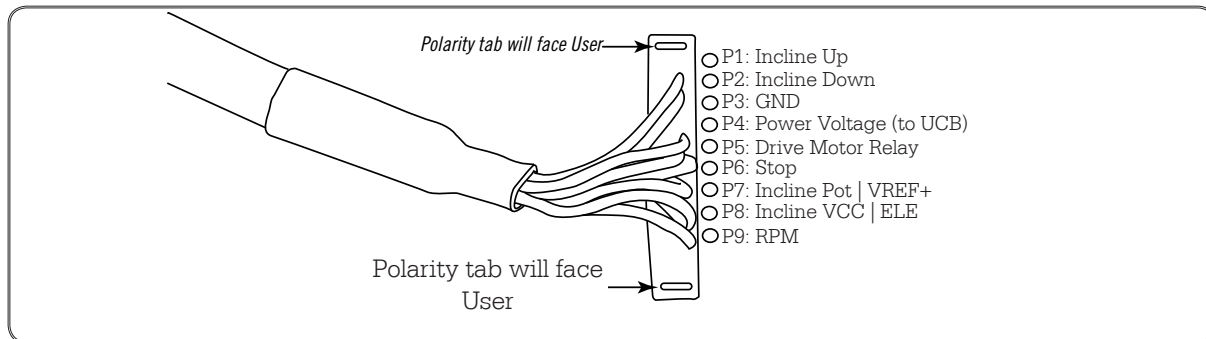
Note | 2: It may be necessary to remove the glue from the console cable to access the pins.

>> Speaker Amp Board Voltage | 30727 Only



Voltage In	Voltage Out
120v	12v

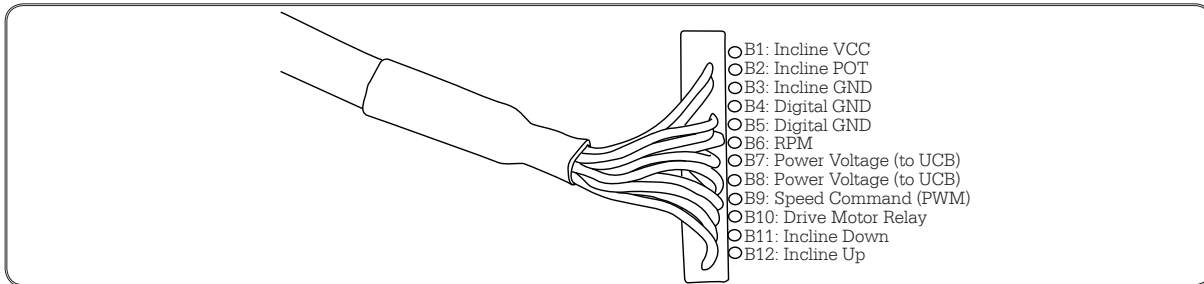
>> 9 Wire Console Cable Voltage Chart (DC Volts) Model 30750



Wire Color	Function	Console Cable Voltage no wires cut	Voltage at UCB after wire's cut	Voltage at MCB after wire's cut	Physical Symptoms-If Wire Cut
1 Red	Incline Up	0.0 vdc before started, +1.9 vdc while inclining, 0.0 vdc while declining. Voltage constant while inclining/declining.	2.5 vdc b/f start, 5.0 vdc after start.	3.7 vdc b/f start, 0.0 vdc after start.	Incline motor will go up but not down.
2 Brown	Incline Down	0.0 vdc before started, 0.0 vdc while inclining, +1.9 vdc while declining. Voltage constant while inclining/declining.	2.5 vdc b/f start, 0.8 vdc after start.	0.0 vdc b/f start, 0.1 vdc after start.	Incline motor will go down but not up.
3 Orange	GND	n/a ground	0.0 vdc	0.0 vdc	Console will not turn on.
4 Yellow	Power Voltage (to UCB)	+15 vdc constant range.	0.0 vdc	14.55 vdc	Console will not turn on.
5 Green	Drive Motor Relay	+1.6 vdc before started, 0.0 vdc after started.	1.4 vdc b/f start 0.8 vdc after start	0.0 vdc b/f start 1.4 vdc after start	No belt movement.
6 Blue	Stop	Constant 0.53 vdc-0.69 vdc 3.6 vdc when the safety key is removed. Will remain at 3.6 vdc until Start is pressed.	5.0 vdc safe off 1.3 vdc safe on 1.7 vdc running 1.9 vdc paused	16.6 vdc safe off 0.0 vdc safe on and running	No physical symptoms were noticed when this wire was removed.
7 Purple	Incline Pot/ VREF+	+2.5 vdc at 0.0% incline, +0.5 vdc at max incline. Voltage changes with each change in incline.	2.5 vdc	3.7 vdc b/f start, 5.0 vdc after start.	If the incline is changed from 0.0%, the motor will move constant up until the incline on the console is returned to 0.0%. It will then stop in place and NOT go down.
8 Grey	Incline VCC/ ELE	+2.5 vdc constant.	3.8 vdc b/f start 4.8 vdc after start	2.5 vdc	Incline constant up as soon as start is pressed. Incline will work in Hardware test.
9 White	RPM	When the speed sensor is aligned to the magnet; short, 0.0vdc. When the speed sensor is not aligned: open, +5.0 vdc.	5.0 vdc	0.0 vdc	Console will use default PWM value or auto-cal values. Will not auto-cal, will not show speed in Hardware Test.

Note: Wire colors are subject to change.

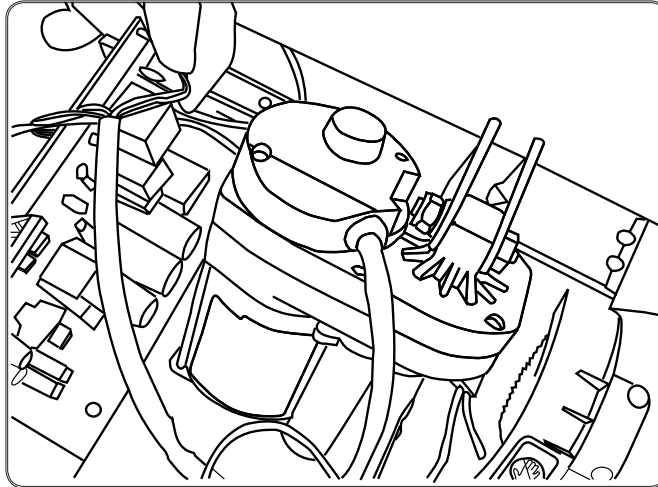
>> 12 Wire Console Cable Voltage Chart (DC Volts) Model 30727



Wire Color	Function	Console Cable Voltage no wires cut	Voltage at UCB no wires cut	Voltage at MCB after wire's cut	Physical Symptoms-If Wire Cut
1 Black	Incline VCC	2.5 vdc	0.0 vdc	2.5 vdc	After Start pressed constant down incline, down LED constant on. In Hardware Test the motor moves down but not up, value always at maximum.
2 Brown	Incline Pot	2.5 vdc at 0.0% incline, 0.5 vdc at max incline. Voltage changes with each change in incline.	2.5 vdc	0.0 vdc	After Start pressed constant down incline, down LED constant on. In Hardware Test the motor moves down but not up, value always at maximum.
3 Red	Incline GND	n/a ground	2.5 vdc, grounded at MCB not UCB.	0.0 vdc, grounded at MCB not UCB.	Constant up incline. In Hardware Test, motor moves up and down. Incline value started low and went down to 0 but not up past 10. Value changes very slowly.
4 Orange	Digital GND	n/a ground	0.0 vdc	0.0 vdc	If one removed, no issues. If both removed: UCB does not turn on. Both incline lights are on and incline motor hums and gets hot quickly. See below for voltage chart if both grounds removed.
5 Yellow	Digital GND	n/a ground	0.0 vdc	0.0 vdc	
6 Green	RPM	When speed sensor aligned to magnet: short, 0.0vdc. When sensor not aligned: open, 5.0 vdc	5.0 vdc	0.0 vdc	Everything works in normal mode but the console does not register a speed in Hardware Test or Auto Calibration
7 Blue	Power Voltage (to UCB)	15 vdc constant Range=15 to 17 vdc	0.0 vdc	17 vdc	If one removed, no issues. If both removed: UCB does not turn on. At UCB green measures 0.46 vdc, white 1.4 vdc, all others 0.0 vdc.
8 Purple		15 vdc constant Range=15 to 17 vdc	0.0 vdc	17 vdc	
9 Grey	Speed Command (PWM)	0.0 vdc before started, 0.5 vdc at 0.5 mph, 4 vdc at 10 mph. Voltage changes as speed changes.	"0.0 vdc b/f start increases as console speed increased"	"0.8 vdc b/f start no change as console speed increased"	No belt movement, MCB relay clicks. LCD 1 lights. When measuring MCB voltage, there is a slight belt movement, then stops
10 White	Drive Motor Relay	4.3 vdc before started 0.0 vdc after started	"5.0 vdc b/f start 0.0 vdc aft start"	"1.4 vdc b/f start 1.4 vdc aft start"	No belt movement, no click from MCB relay. LED 1 does not light.
11 Pink	Incline Down	0.0 vdc before started, 0.0 vdc while inclining, 1.9 vdc while declining. Voltage constant while inclining/declining.	"0.0 vdc b/f start 5.0 vdc if press incline down"	0.0 vdc	Up incline functions, no down incline, LED's function for up, not for down. If incline then decline, motor does not move again until past incline point. Ex. If incline to 2.0 % then back down to 0%, the motor will not move until 2.5 %. In Hardware Test, only up incline, value increases, does not decrease.
12 Light Blue	Incline Up	0.0 vdc before started, 1.9 vdc while inclining, 0.0 vdc while declining.	"0.0 vdc if at 0% 5.0 vdc if not at 0% or at console height"	0.0 vdc	Down incline functions, no up incline, LED's function for down but not up. In Hardware Test, down incline functions until value at 0, no up incline. Similar phenomenon to cut Pink wire if incline stopped not at 0%.

Note: Wire colors are subject to change.

>> Incline Wire Voltage Chart



Small Connector						
Wire Color	Function	Before Start	At 0.0%	At 10%	Physical Symptoms-If Wire Cut	ENG 1 Test Results
Blue	Ground	n/a Ground	n/a Ground	n/a Ground	Constant up incline, no down incline.	Incline value 0, no down incline.
Brown	Incline Pot	2.3 vdc*	0.6 vdc*	0.6 vdc*	Constant down incline, no up incline.	Incline value at max, no up incline.
Orange	VCC	2.4 vdc constant	2.4 vdc constant	2.4 vdc constant	Constant down incline, no up incline.	Incline value started one less than max, pressed up once and value maxed out, thereafter no up incline.

* The voltage changes as the incline changes

Large Quick Connects							
Wire Color	Function	Before Start	After Start, Not Inclining Or Declining	While Inclining	While Declining	Physical Symptoms-If Wire Cut	ENG 1 Test Results
Black w/white as ground	Incline Up	0.15 vac	0.15 vac	171 vac	120 vac	Up incline works, no down incline.	Up incline works, down does not. Value increases, does not decrease.
Red w/white as ground	Incline Down	0.15 vac	0.15 vac	120 vac	186 vac	Down incline works, no up incline.	Down incline works (until value 0), up does not. Value decreases to 0 then no down incline, does not increase.
Red w/black as ground	Ground	0.03 vac	0.03 vac	219 vac	228 vac	Neither up nor down function.	Neither up nor down function. Value does not change.

Parameter: Use functioning incline motor and remove one wire at a time to observe malfunction

Engineering Mode

>> Model 30727 Only | Model 30750 has no engineering mode.

Note: At Any time, Press and hold the STOP button to exit the engineering menu.

- 1 | Turn the treadmill power to ON.
- 2 | Place the safety key in position on the console.
- 3 | Simultaneously press and hold (for about three seconds) the incline "+" (▲) and speed "-" (▼) buttons.
- 4 | The console should beep three times and ENG0 (EN90) should be displayed in the time window, "ENGINEERING MENU" scrolls in matrix or is static in the text box.

Note: To navigate through the engineering menu, use the incline "+" (▲) and speed "-" (▼) buttons.

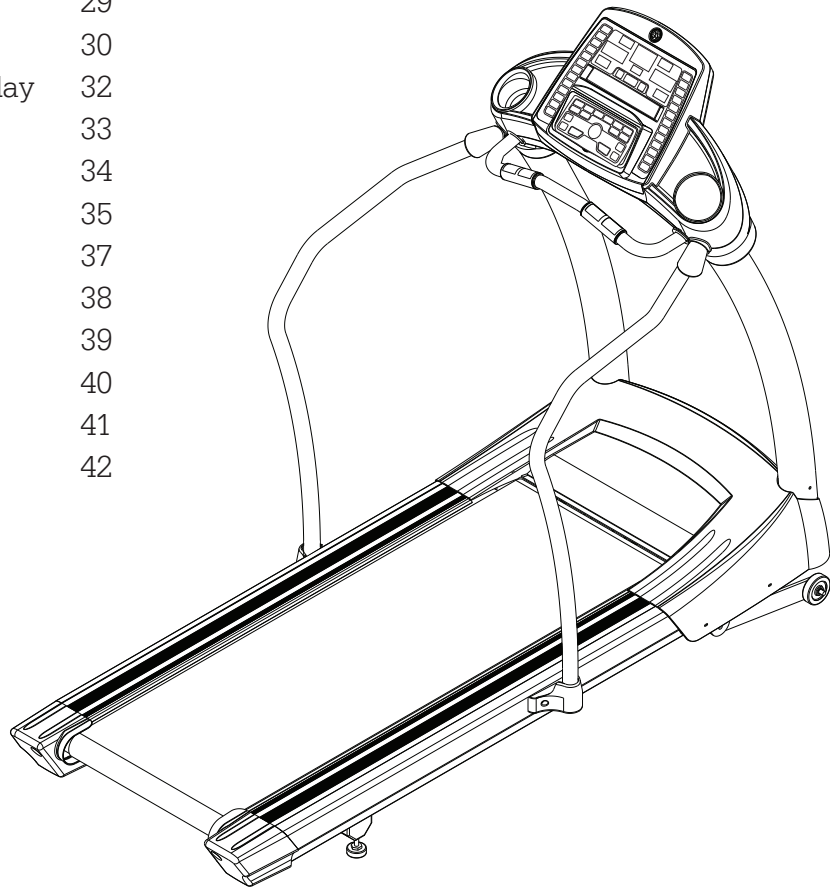
Display Button Test (Eng0)	Switch Function (Eng3)
<p>Eng0 appears in the time window. DISPLAY TEST will scroll in the matrix or will be static in text box.</p> <p>Press ENTER to select . When selected each display segment should be lit up. When pressed each button should have a unique display change.</p> <ul style="list-style-type: none"> -Stop button turns off all lights. -Start button turns all lights on. 	<p>Eng3 appears in the time window. SWITCH FUNCTION will scroll in the matrix or will be static in text box. Press ENTER to select.</p> <p>If the treadmill has a Demo Mode then: -The brickyard will scroll "DEMO ON" or "DEMO OFF". -Default will be "DEMO ON". -The "+" (▲) or "-" (▼) buttons will change the Demo on/off settings.</p> <p>Start Selects miles or km. -The display will show "0" for miles or "1" for km. -The display will scroll "MILES" OR "KM" when Start is pressed to change. -The new setting is automatically saved when Start is pressed, no other buttons need to be pressed to save.</p>
<p>Hardware Test (Eng1)</p> <p>Eng0 appears in the time window. HARDWARE TEST will scroll in the matrix or will be static in text box.</p> <p>Press ENTER to select. Press START to begin.</p> <ul style="list-style-type: none"> -Speed "+" (▲) or "-" (▼) will change the speed. -Speed quick keys will change the speed. Preset to be within 20%. -Incline "+" (▲) or "-" (▼) will change the incline. -Quick incline keys will beep but do not function. -Incline motor will stop at minimum or maximum incline (not continue to move) if "+" (▲) or "-" (▼) is held. 	<p>Information (Eng4)</p> <p>Eng4 appears in the time window. INFORMATION will scroll in the matrix or will be static in text box. Press ENTER to select .</p> <p>ACCUMULATED will scroll in matrix. Time window will show accumulated time. Distance window will show accumulated distance. If Time and Distance are in the same window, the time will show F00 and the distance will show F01. Press "+" (▲) or "-" (▼) to change. If console has an accumulated reset function, hold Start for 5 seconds to reset. This will not apply to most models.</p>
<p>Auto Calibrate (Eng2)</p> <p>Eng2 appears in the time window. AUTO CALIBRATE will scroll in the matrix or will be static in text box.</p> <p>Press ENTER to select. Press START to begin.</p> <ul style="list-style-type: none"> -There should be no excessive speed overshoot. -The engineering menu will be exited upon successful completion of the auto calibration. 	<p>Note: The auto calibration process takes about two minutes to complete.</p>

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Troubleshooting

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Treadmill Troubleshooting

>> Failed Auto Calibration | 30727 Only

Symptom	Possible Cause	Test Procedure	Repair
Failed Auto Calibration – Belt runs for a few seconds and then stops and E1 message on console.	Failed RPM sensor.	-Put machine into Eng1 (Reference p26) and check for slight fluctuation of speed in speed window of display. (Speed should not fluctuate more than a few hundredths.)	Replace RPM sensor.
	RPM sensor misaligned.	-Adjust sensor bracket to correct position.	
	Magnet missing in front roller pulley.		Replace magnet.
	Failed console cable.	-Check voltage and continuity of console cable. Reference p22.	Replace console cable.
Failed Auto Calibration – Belt never runs and E1 message on console.			See troubleshooting for no motor movement. Reference p40.
Failed Auto Calibration – Board never sets speeds. Belt will continue to run and not stop.	RPM sensor not aligned properly or has failed.	- Verify positioning of sensor wire. (Wire coming from RPM sensor points toward the front of the unit, sensor is as close as possible to the magnet in the pulley without touching, and the sensor bracket 90-degree angle, not bent in any way.) - Put machine into Eng1 (Reference p26) and check for slight fluctuation of speed in speed window of display. (Speed should not fluctuate more than a few hundredths.)	Replace RPM sensor.
	Failed motor control board (MCB).		Replace MCB.

Treadmill Troubleshooting

>> Console | Upper Board

Symptom	Possible Cause	Test Procedure	Repair
No display on the console and the power switch is dark. Note: 30750 power switch is not backlit.	Circuit breaker in home has tripped.	-Check for dedicated circuit (20 amp is ideal) and check wall outlet voltage (120 VAC). Reference p14.	Reset breaker.
	Failed power switch.	-Make sure power switch is turned on.	Replace power switch if necessary.
	Failed power cord.	-Take voltage check of power cord. Reference p13.	Replace power cord.
No display on the console and power switch on machine is lit.	Breaker on machine has tripped or has failed.	-Reset breaker.	Replace breaker if necessary.
	Improper wiring or AC wires have failed.	-Check all wiring coming in from the power switch to the motor control board and to the upper board. Reference p17.	Connect wires correctly or replace as needed.
	Failed console cable.	-Check console cable voltages at B7, B8 Reference p22.	Replace console cable.
	Failed upper board.	-Check voltage and continuity of console cable. Reference p22.	Replace upper board.
	Failed motor control board (MCB).	-Check voltage and continuity of console cable. Reference p22. -Verify the power LED is lit on the MCB.	Replace motor control board.

Treadmill Troubleshooting

>> Console | Upper Board Continued

Symptom	Possible Cause	Test Procedure	Repair
Running belt stops and console resets during workout.	Safety key or reed switch is positioned incorrectly or Safety key is damaged.	-Verify that the safety key is in position and that it is secure. -Manually adjust the position of the reed switch trigger and/or the plastic tab on the console shell. (Slot style safety key only.)	- Replace safety key. - If plastic tab is broken replace console shell. (Slot style safety key only.)
	Inadequate power.	-Check for dedicated circuit (20 amp is ideal) and check wall outlet voltage (120 VAC). Reference p13. -Make sure machine is not on extension cord or surge protector.	If the AC voltage is missing or incorrect, check the AC service or consult an electrician.
	Damaged or improper wiring.	-Verify there are no pinches or cuts in the power cord, power wires motor wires, or console cable. -Verify the connections of above wires and cords.	Replace parts as needed.
	Inadequate lubrication on deck and running belt.	-Place hand underneath running belt and feel for adequate silicone application.	Apply silicone.
	Membrane keys.	Reference Membrane Troubleshooting p32.	

Treadmill Troubleshooting

>> Membrane | Key Pad | Overlay

Symptom	Possible Cause	Test Procedure	Repair
All or some of the keys on the console will not work.	Ribbon cables connecting the membrane keypad to upper board are not seated properly or are disconnected.	-Verify the ribbon cables are connected securely into the upper board.	Remove and reseal cables.
	Membrane keypad defective.	-Keys are pressed, some of the buttons may function but there are no corresponding beeps. -Put in Eng0 to check button function. Reference p26.	Replace membrane keypad.
	Upper board defective.	-Keys are pressed and there are corresponding beeps, but console does not respond. (Sometimes the key will not beep until it is released).	Replace upper board.
Unit starts as soon as safety key is in place or console will reset itself after a few seconds of use.	Membrane keypad defective.	-Massage buttons on keypad to make sure that none are stuck. -Remove overlay and press keypad for proper function. -Put in Eng0 to check button function. Reference p26.	Replace membrane keypad.

Treadmill Troubleshooting

>> Safety Key | Reed Switch

Symptom	Possible Cause	Test Procedure	Repair
Console only displays dashes or 'Safety Key Off' in the display window – Magnet style key.	Safety key is positioned incorrectly or has failed.	-Remove safety key and reapply. -Test magnet.	Replace safety key.
	Failed reed switch or failed upper control board.	-Short the switch connector on the upper board by using a flat blade screwdriver or by placing a jumper switch on the connector.	If the upper board still displays dashes then replace upper board. Otherwise replace reedswitch.
Safety key will only register if moved outside of the proper position.	Improperly aligned reedswitch.	Remove glue from reedswitch and reposition.	Test for proper function and glue into place.

Treadmill Troubleshooting

>> Heart Rate

Symptom	Possible Cause	Test Procedure	Repair
Heart rate erratic.	User error.	Reference Proper Heart Rate Usage p11.	
	Failed heart rate receiver.	Reference Proper Heart Rate Usage p11.	If proper heart rate instructions are followed and heart rate continues to be erratic, replace heart rate receiver.
	Failed upper board.	Reference Proper Heart Rate Usage p11.	Replace upper board.
No heart rate function. (Hand Grips)	Failed heart rate grips.	Reference Proper Heart Rate Usage p11.	If there is absolutely no heart response, replace heart rate grips.
Heart rate erratic.	User error.	Reference Proper Heart Rate Usage p23.	
	Electromagnetic interference.	Check immediate area for causes of interference: florescent lighting, electric dog fences, large electric motors, etc..	Remove interference from vicinity of the unit.

Treadmill Troubleshooting

>> Erratic Speed | Model 30727 Only

Symptom	Possible Cause	Test Procedure	Repair
Erratic speeds - Upon pressing start, belt speed increases rapidly for a few second and then comes to a complete stop.	Failed optic sensor.	-Test voltage from Optic Sensor. Reference p19.	Replace optic sensor.
Erratic speeds - Upon pressing start, belt speed increases rapidly and does not stop.	Failed motor control board (MCB).		Replace MCB.
Erratic speeds - Running belt speed is not stable.	Machine not calibrated properly.	-Run auto calibration. Reference Eng. Mode p26.	If unit fails to auto calibrate, refer to auto calibration troubleshooting. Reference p29.
	Inadequate power.	-Check for dedicated circuit (20 amp is ideal) and check wall outlet voltage (120 VAC). Reference p13. -Make sure machine is not on extension cord, surge protector or GFCI circuit.	If the AC voltage is missing or incorrect, check the AC service or consult an electrician.
	Failed or improper wiring.	-Verify there are no pinches or cuts in the power cord, power wires, motor wires, or console cable. -Verify the connections of above wires and cords.	Replace parts as needed.
	-Running belt is too loose or too tight. -Drive belt is too loose or too tight.	-The running belt should not slip at all when customer is using the machine. Reference Belt Tensioning p10. -The drive belt should have approximately 3/8 of inch deflection.	Set proper drive belt and running belt tension.

Treadmill Troubleshooting

>> Erratic Speed Continued

Symptom	Possible Cause	Test Procedure	Repair
Erratic speeds - Running belt speed is not stable. (Continued)	Inadequate lubrication on deck and running belt.	-Place hand underneath running belt and feel for adequate silicone application. Reference Maintenance p8.	Apply silicone.
	Failed motor control board (MCB).		Replace MCB.
Erratic Speeds-belt speed increases without command, but shows change on display and beeps.	In a program.	-Remove safety key, then replace. -Start in P1 and see if reoccurs.	
	Stuck button.		Reference membrane keypad and overlay troubleshooting p32.
	Failed upper board.		Replace UCB.

Treadmill Troubleshooting

>> Erratic Speed | Running Belt | Model 30750 Only

Symptom	Possible Cause	Test Procedure	Repair
<p>Belt overshoots desired speed on console and then slow back down. This can happen during operation or when you first press start.</p> <p>-Speed of the belt will not match the displayed speed.</p>	Failed speed sensor or console cable.	<p>-Check to see if the speed sensor is properly connected to the lower board.</p> <p>-Check position of sensor (Wire coming from sensor points towards the front of the machine, is a close to the front roller as possible without touching, and the sensor bracket is at a 90- degree angle, not bent in any way).</p> <p>-Verify there is a magnet in the front roller.</p> <p>-Check console cable for pinches and make sure it is connected properly to both the upper and lower boards.</p>	Send speed sensor and console cable. Replace parts as needed.
Running belt feels choppy, almost like it's stuttering when a customer walks	<p>-Torque adjustment on lower board is incorrect.</p> <p>-Running belt is loose.</p>	<p>-Tighten running belt. (Do not overtighten belt if it still feels choppy.)</p> <p>-Tech in the field only: Adjust torque pod until belt runs smooth.</p>	Replace lower board.
Running belt continues to move even after stop is pressed	-Torque Adjustment on lower board is incorrect.	-Tech in field only: Adjust torque pod until belt stops.	Replace lower board.
<p>Why this happens: If the speed sensor is defective then the belt will keep moving as it's trying to get that info. It will speed up a little as it realizes there is no signal from the speed sensor then slow down to the default PWM value in the console. For the units without auto-cal there are some speeds that are preset in the upper board to keep it running. It will try to use the speed sensor but if that is not working it will use the pre-programmed values instead. It works kind of like auto cal but the values are already programmed instead of set for each individual unit so they will not be as accurate.</p>			

Treadmill Troubleshooting

>> Elevation | Model 30727 Only


IMPORTANT

It's recommended to send console cables for elevation repairs on all models using sectional console cables.

Symptom	Possible Cause	Test Procedure	Repair
Elevation motor starts running as soon as the power is turned on. Constant down or up..	Failed lower board.	-Turn on power. Do not press start. Wait 30-60 seconds and see if motor is hot. Use caution. Motor can get very hot.	Replace lower board.
Elevation motor bobs up and down with out command.	Failed elevation motor.		Replace elevation motor.
Elevation motor does not reach minimum or maximum settings.	-Failed elevation motor. -Failed console cable (CC). -Improperly calibrated elevation motor.	-Verify there are no pinches or cuts on the elevation wires. Reference CC continuity p22. -Verify the connections of above wires.	-Recalibrate elevation motor by hand. Reference Resetting the Incline Motor p18. -Replace elevation motor.
Elevation is stuck down and does not function. Console is responsive to the buttons being pressed.	Failed console cable (CC).	-Verify console cable connections. Verify there are no pinches or cuts in the cable. Reference CC continuity p22.	Replace console cable.
	Failed elevation motor.	-Put machine in hardware test (Eng1) and press start. Elevation doesn't respond when buttons are pressed. (You may see a value for elevation that reads 255 or 1023. That value will not change when the buttons are pressed). Reference Eng. Mode p26.	Replace elevation motor.
	Failed upper board.	-Put machine in hardware test (Eng1) and press start. Incline will work in hardware test only. Reference Eng. Mode p26.	Replace upper board.
Elevation is stuck at the highest position and will not come down. Console is responsive to the buttons being pressed.	Failed upper board, lower board, console cable, and elevation motor.	-Verify all wire connections.	Replace upper board, console cable, and elevation motor.
The incline will go up, but not down. (very rare)	Failed lower board.	-The incline will act normally when going up, bet when the down incline is pressed there is no movement.	Replace lower board.

Treadmill Troubleshooting

>> Elevation | Model 30750 Only

IMPORTANT

1. VERIFY the Customer is using the Two Touch Confirm
2. Verify C.C. connection at the MCB and customer assembly points

Symptom	Possible Cause	Test Procedure	Repair
Incline is Stuck Up or Not Functioning		Turn off the Unit at the base. Wait 30 seconds then turn unit back on.	
	CC is loose, unattached or damaged.	Check CC at each connection point. Unplug and reattach, making sure the connection is secure. Verify the CC is connected to the MCB.	-Replace CC if damaged.
	Improper use of the Two Touch membrane Keys.	Verify the customer is confirming each selection.	
The incline increases as soon as power is applied without pressing start.	MCB is defective.		-Replace MCB.
The incline will only go up. It is stuck either at the top or the middle.	Buttons are stuck.	Test the Incline Buttons Verify they are functioning.	
	CC is defective.	Verify The CC conections.	-Replace CC .

Treadmill Troubleshooting

>> No Motor Movement

Symptom	Possible Cause	Test Procedure	Repair
No Motor Movement - Upon pressing start, console responds normally, keys respond normally, and elevation works but no belt movement.	Inadequate power.	-Check for dedicated circuit (20 amp is ideal) and check wall outlet voltage (120 VAC). -Make sure machine is not on extension cord or surge protector or GFCI. Reference p4.	If the AC voltage is missing or incorrect, check the AC service or consult an electrician.
	Damaged or improper wiring.	-Verify there are no pinches or cuts in the power cord, power wires motor wires, or console cable. -Verify console cable continuity. Reference p24. -Verify the connections of above wires and cords.	Replace parts as needed.
	Failed motor control board (MCB).	-Verify power from MCB. Reference p19.	Replace MCB.
	Failed drive motor.	-Measure voltage output from motor. Reference motor, AC Wire Voltage Check p21.	Replace drive motor.
	Failed optic sensor.	-Verify voltage of digital sensor. Reference p19.	Replace optic sensor.

Treadmill Troubleshooting

>> Circuit Breaker

Symptom	Possible Cause	Test Procedure	Repair
Machine will trip home circuit breaker.	Inadequate power.	-Check for dedicated circuit (20 amp is ideal) and check wall outlet voltage. (120 VAC). Reference p4. -Make sure machine is not on extension cord, surge protector or GFCI.	If the AC voltage is missing or incorrect, check the AC service or consult an electrician.
	Inadequate lubrication on deck and running belt.	-Place hand underneath running belt and feel for adequate silicone application.	Apply Silicon lubrication. Reference Lubrication p9.
	Failed running belt.	-Feel underside of running belt. It should have a rough feel to it. (similar to denim)	Replace running belt.
	Failed drive motor.	-Perform AMP draw test on motor. Reference AMP Draw, p14.	Replace drive motor.
	Failed motor control board (MCB).		Replace MCB.
Machine breaker will trip.	Failed circuit breaker.		Replace circuit breaker.

Treadmill Troubleshooting

>> Noise

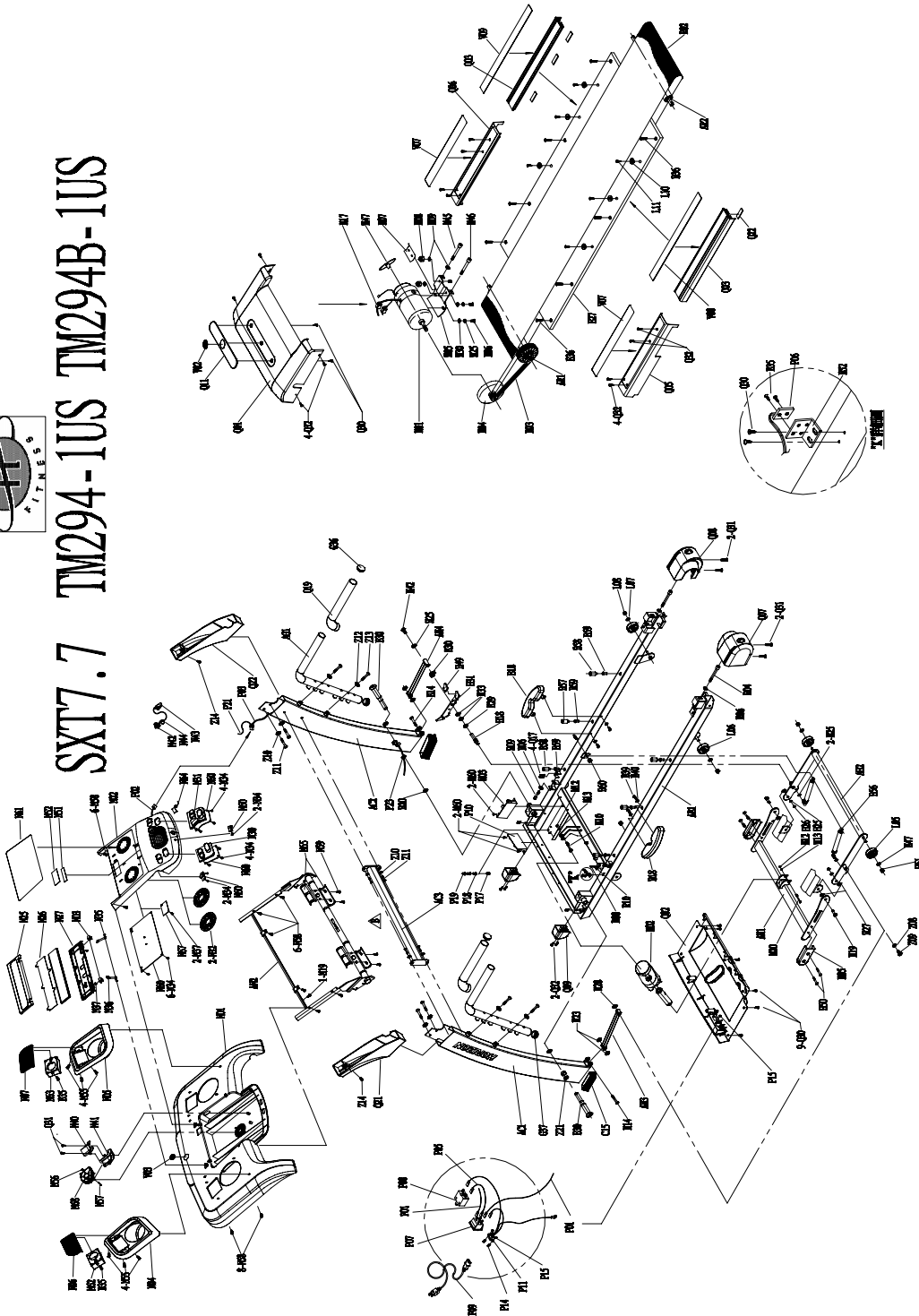
Symptom	Possible Cause	Test Procedure	Repair
Thumping sound when running belt is engaged.	New treadmill.	Let the treadmill run for about 30 min. at 5mph without a load to break in new running belt in.	
	Failed roller.		Replace front or rear roller as needed.
Rubbing or grinding sound from underneath motor cover.	Misaligned drive belt.	- Remove motor cover and verify alignment of drive belt. - Inspect for debris on drive motor pulley, front roller pulley, or on drive belt.	Align drive belt and/or replace drive belt.
	Optic disk is hitting the optic sensor/guard.	-Run unit and look for optic sensor/disk missalignment.	Bend optic disk to straighten or replace optic disk.
	Failed drive motor bearings.		Replace drive motor.
	Motor brushes are not seated properly.	Inspect motor brushes and commutator for abnormal wear.	Replace motor brushes and/or stone commutator.
Banging or clunking sound.	-Unit not level. -Bent frame.	-Check levelers and the floor. -Inspect frame for damage.	-Adjust levelers. -Move unit to a level surface. -Place on rubber mat.

Exploded Drawing

>> 30727 | Note Drawings are updated periodically:
Contact Customer Tech Support for updated Drawing.



SXT7.7 TM294-1US TM294B-1US

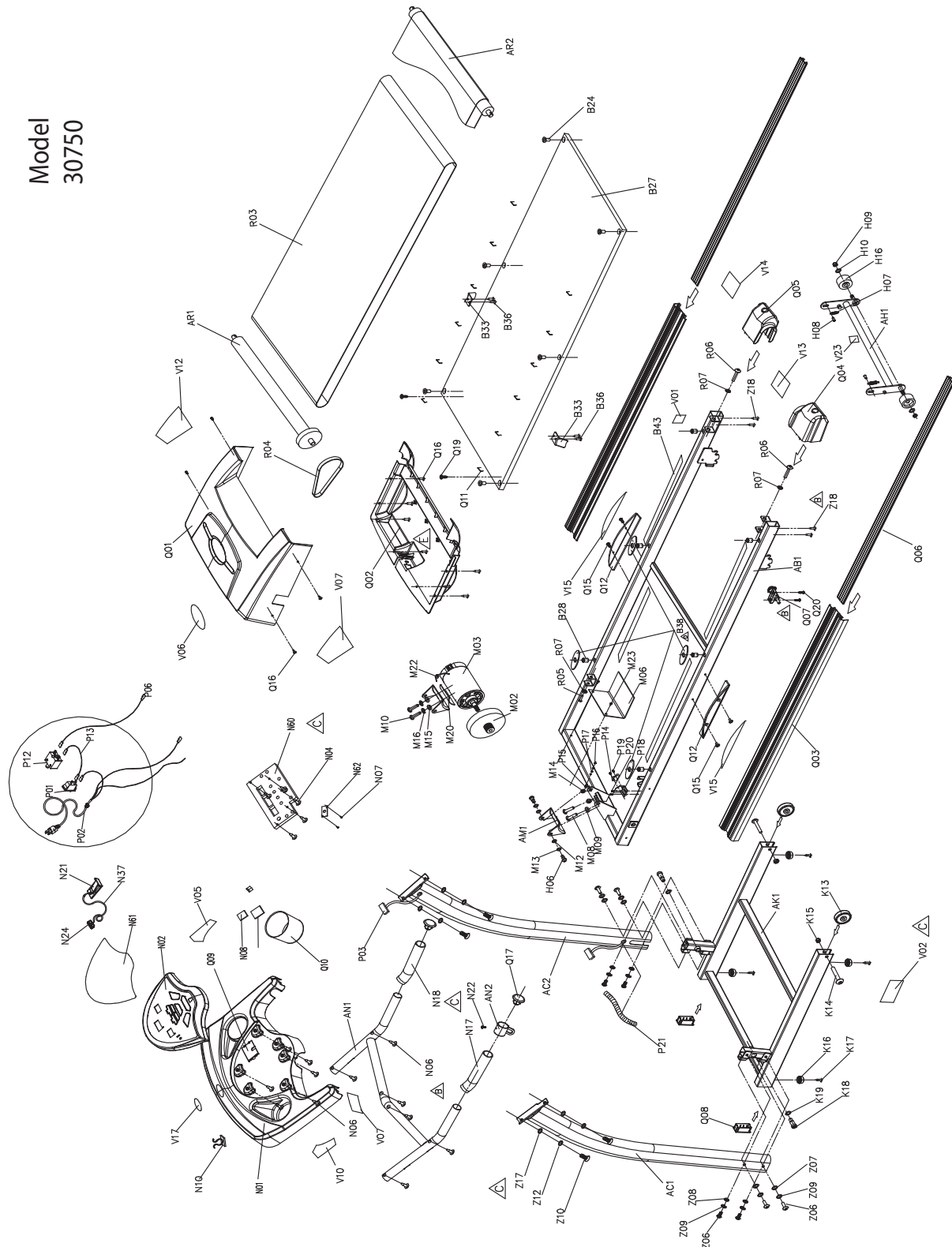


TM294-A04A 2007/05/25

Exploded Drawing

>> 30750 | Note Drawings are updated periodically:
Contact Customer Tech Support for updated Drawing.

Model
30750



Horizon Fitness | 1620 Landmark Drive, Cottage Grove WI 53527
Phone 800-244-4192 | Fax 608.839.1280 |

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