2011

Tempo T904 Service Manual

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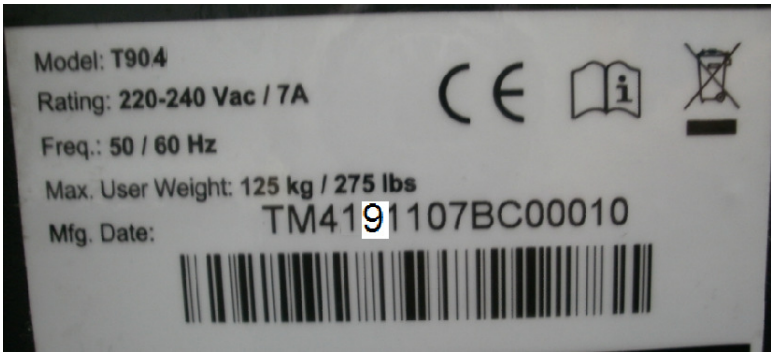
CHAPTER 1: Serial Number Location

1-1 Serial Number Location



CHAPTER 2: **Preventative Maintenance**

2.1 PREVENTATIVE MAINTENANCE

Preventative maintenance is the key to smoothly operating equipment, as well as keeping the user's liability to a minimum. Equipment needs to be inspected at regular intervals. Defective components must be replaced immediately. Improperly working equipment must be kept out of use until it is repaired. Ensure that any person(s) making adjustments or performing maintenance or repair of any kind is qualified to do so.

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 Customer Technical Support.
- 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.
- If any labels are damaged or illegible, contact Customer Technical Support for replacements.

EVERY WEEK (WEEKLY)

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 secured.
- 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.

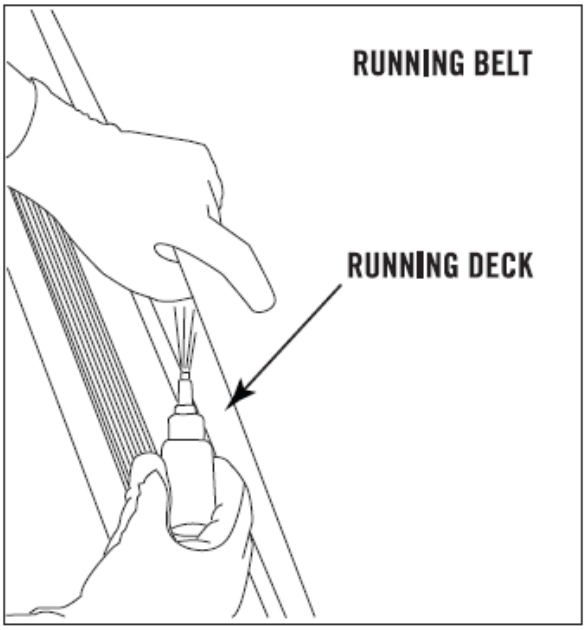
EVERY MONTH - IMPORTANT!

- 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.
- Remove the motor cover. Wait until ALL display screens 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.

CHAPTER 2: **Preventative Maintenance**

2.1 PREVENTATIVE MAINTENANCE

EVERY 6 MONTHS OR 150 MILES



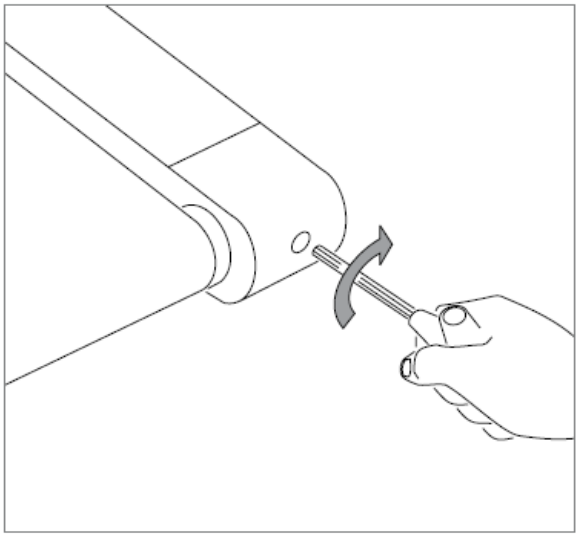
It is necessary to lubricate your treadmill running deck every six months or 150 miles (240 kilometers) to maintain optimal performance. Once the treadmill reaches 150 miles (240 kilometers), the console will display the message **"LUBE"** or **"LUBE BELT"**. The treadmill will not operate while the message is showing. Hold **'STOP'** for 5 seconds to suspend message for 5 miles.

Your treadmill came with a bottle of lubricant which can be used for two applications.

- 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.

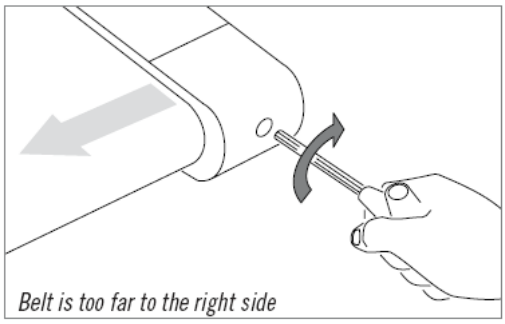
2.2 TENSIONING & CENTERING THE RUNNING BELT

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. To eliminate this slipping, turn the treadmill off and tension both the rear roller bolts using the supplied Allen wrench, turning them ¼ turn to the right as shown. Turn the treadmill on and check for slipping. Repeat if necessary, but never turn the roller bolts more than ¼ turn at a time. Belt is properly tensioned when the slipping sensation is gone.



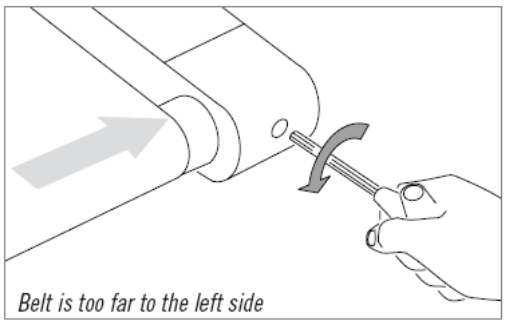
The running belt has been properly adjusted at the factory before it was shipped. At times the belt can move off-center during shipment. Before operating the treadmill, make sure the belt is centered and remains centered to maintain smooth operation.

If the running belt is too far to the right side: With the treadmill running at 1 mph, turn the left adjustment bolt counter-clockwise ¼ turn at a time (using the supplied Allen wrench). Check the belt alignment. Allow belt to run a full cycle to gauge if more adjustment is needed. Repeat if necessary, until the belt remains centered during use.



Belt is too far to the right side

If the running belt is too far to the left side: With the treadmill running at 1 mph, turn the right adjustment bolt counter-clockwise ¼ turn at a time (using the supplied Allen wrench). Check the belt alignment. Allow belt to run a full cycle to gauge if more adjustment is needed. Repeat if necessary, until the belt remains centered during use.



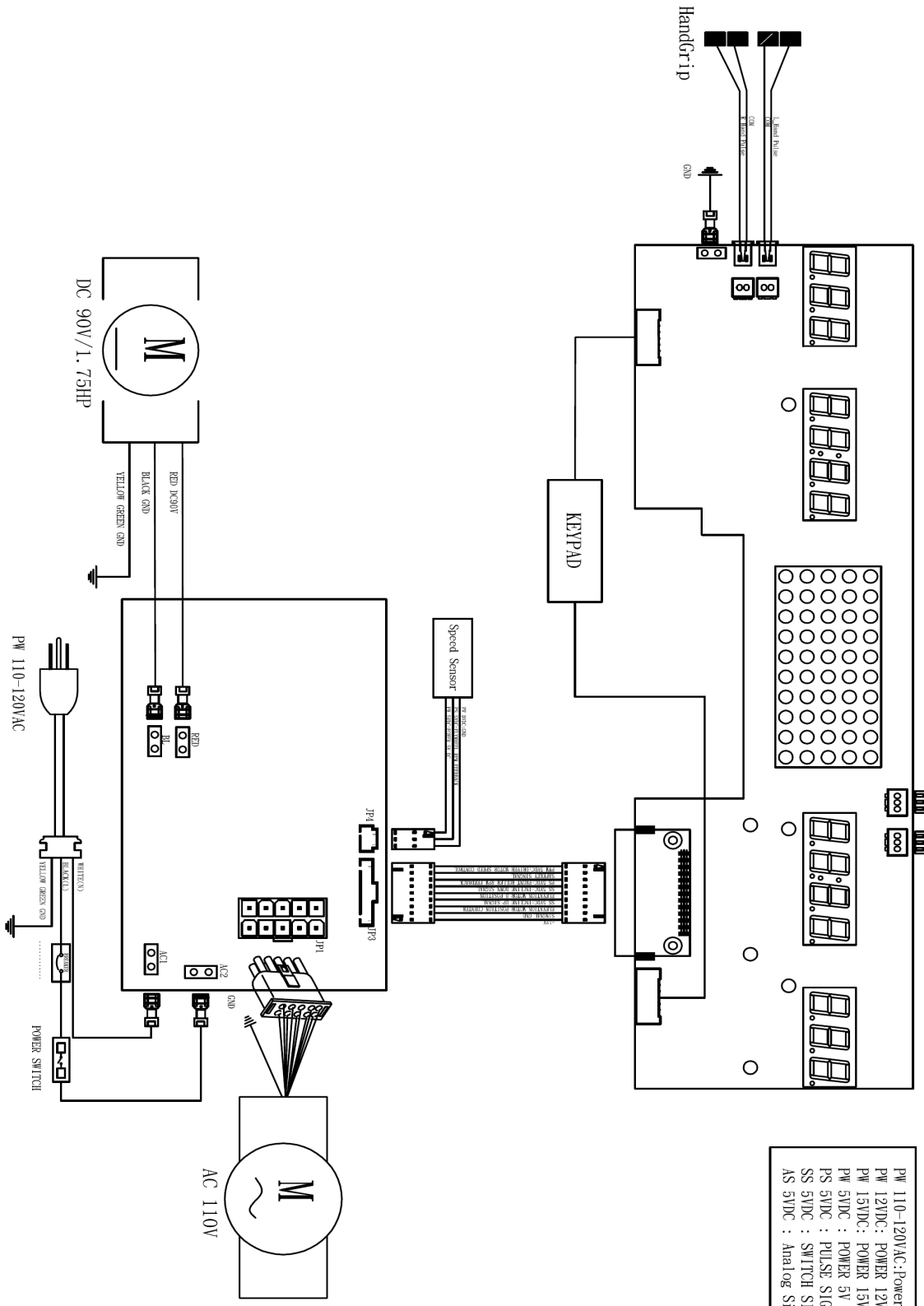
Belt is too far to the left side

3. ENGINEERING MODE

1) To enter Engineering Mode, press & hold the INCLINE UP "▲" and SPEED DOWN "▼" keys at the same time for 3-5 seconds until Engineering Menu appears on the display.
2) Use the INCLINE and SPEED UP and DOWN keys to select a parameter.
3) Press ENTER to enter a parameter setting.
4) Use the INCLINE and SPEED UP and DOWN keys to change the parameter.
5) Press the START key to save the change to the parameter.
6) Press and hold the STOP key to exit Engineering Mode and return to normal operation.

Mode	Function	Description
Eng 0	Display Test	Start→ LED on Stop→LED off Any Keys→display on window Hold "Stop" 3 sec→ back to "Engineering Menu"
Eng 1	Hardware Test	Motor , Incline motor test
Eng 2	Auto Calibration	To auto calibrate speed only. Press "Enter" first, then press "START"
Eng 3	Switch Function	Use incline or speed to change "Demo" on or off Use "Start" to select unit. 1—KM, 0—Mile
Eng 4	Information	Accumulated Time and Distance Hold "Start" 5 sec to reset Remarks: Unit of Time is Hour. Unit of Distance is KM or Mile based on your set.

4.1 Electrical Diagram



4.2 TROUBLESHOOTING – NO POWER TO THE CONSOLE

NO POWER TO THE CONSOLE

1) SYMPTOM:

a. The power switch is in the on position, but the console will not turn on.

2) SOLUTION:

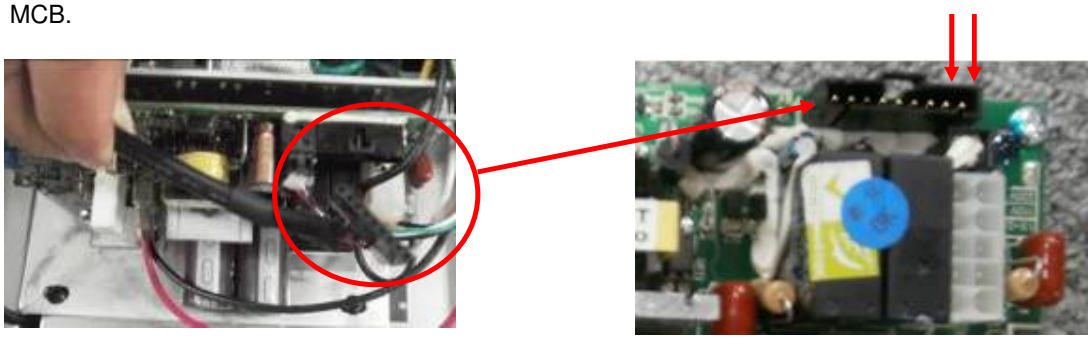
a. Check to see if the power switch is lit. If it is not, try a different outlet.

- If the power switch still does not light up with a known good outlet, replace the power switch.

b. Check to see if the MCB has power. Check the connection of the power wiring from the power receptacle to the MCB. Use a multi-meter to measure AC1 & AC2, AC voltage shall be same as local's standard voltage (100-240V).

c. If he MCB does have input power, check the connection of the console cable wire at the MCB and PCB.

- Remove the console cable from MCB, and use a multi-meter to measure the DC voltage between the "GND pin" (Pin 2) and the " + 12V Pin" (Pin 1)---**see section 4.1**. DC output is normally around DC 15V. If no output, replace the MCB.



- If output is around DC 12V, check the console cable. If it is defective, replace the console cable.
- If the console cable connections are all good, replace the PCB.

4.3 TROUBLESHOOTING – NO CONSOLE RESPONSE

THE POWER IS ON, BUT MACHINE HAS NO RESPONSE

1) SYMPTOM:

a. The power is on and the console lights up, but the treadmill does not run when keys are pressed.

2) SOLUTION:

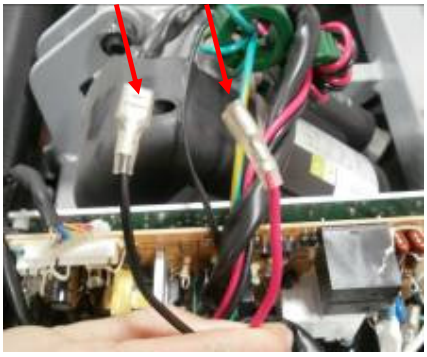
a. Check if the console beeps when all keys are pressed. If no, replace the keypads.

b. Enter Engineering Mode (See Section 4.1), and scroll to ENG 1 (Hardware Test).Press the key “ENTER” first and then the key ”START”.

- When press the key “SPEED + / -“, if the data on windows “TIME” & “DISTANCE” is changed, the console is ok. If not, replace the PCB.

c. Turn off the power switch, and open the motor upper cover. Remove the red & black wires of motor from the MCB, and use a multi-meter to measure the resistance of drive motor.

If the resistance is bigger than 10 Ω, the drive motor is defective. **Replace the drive motor.**

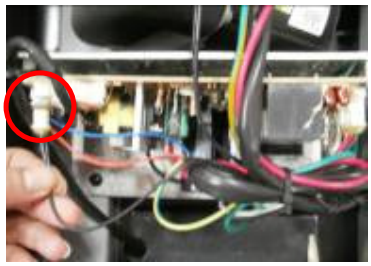


If the resistance is lower than 10 Ω, the drive motor is ok. Then,

A. Check the pulley if Magnet in . If miss, re-install a new magnet

B. Check the gap between Magnet and Speed sensor. Normally it is within 5 mm. To adjust the speed sensor if gap is much too big.

C. Check the connection of the speed sensor wire at the MCB



- If the speed sensor wire has a good connection but still will not operate, replace the speed sensor wire.
- Replace the MCB as the last step if machine does still not run after to take above actions.

4.4 TROUBLESHOOTING - SPEED FEEDBACK INACCURATE

SPEED FEEDBACK INACCURATE

1) SYMPTOM:

a. The treadmill speed is higher or lower than the actual speed.

2) SOLUTION:

a. Enter Engineering Mode (See Section 4.1), and scroll to ENG 2 (Auto Calibrate). Press the key “ENTER” first and then the key ”START” (Figure A & B). The treadmill running belt will begin to move automatically from speed level P0 to P4.

Upon successful calibration, the treadmill will beep several times. The console will automatically exit Engineering Mode and return to the start-up screen.

b. If Auto Calibration can be completed successfully, normally this issue will be fixed.

If auto calibration can still not performed, check the connection of the speed sensor wire to the MCB. Replace the speed sensor wire if needed.

Replace the MCB as the last step.

4.5 TROUBLESHOOTING - NOISE ISSUES

NOISE ISSUES

1) SYMPTOM:

a. Thumping noise twice per rotation on new machine.

b. Rubbing / grinding noise.

c. High pitched “bell-like” sound from under the motor cover.

d. Banging or clunking sound.

e. Slapping / thunking / squeaking sound with each footstep.

f. Rubbing sound underneath the treadmill.

g. Squeaking noise when raising / lowering the deck into storage positions.

h. Squeaking / grinding noise when using elevation.

2) SOLUTION:

a. This noise is from the roller or running belt.

- If this is a new unit, some noise is normal as the running belt forms around the rollers and the joint of the belt.
- Check that the belt is centered and tensioned correctly.
- Remove and clean the rollers if needed.
- Replace the rollers or running belt as needed.

b. This sound is likely a moving component.

- Remove the motor cover and check the drive belt for alignment and make sure it is not slipping or is frayed / cut in any way. Replace the drive belt if needed.
- Make sure the optic disk on the motor is not rubbing the speed sensor.
- Turn the motor by hand to see if motor brushes or bearings are rubbing. Replace the motor if needed.
- Check the front and rear rollers, replace if needed.

c. This sound is likely caused by the optic disk.

- Check that the optic disk is tight on the motor and not rubbing the speed sensor.

d. The sound is likely due to the unit not being level.

- Check that all levelers are touching the ground.
- Move the treadmill to another flat surface.

4.5 TROUBLESHOOTING - NOISE ISSUES-CONTINUED

e. This sound is from the running deck / belt.

- Check that the running deck is tightly attached to the frame.
- Check the deck shocks for detioration or crumbling. Replace if needed.
- Check to see if the air shock is making this noise, lubricate or replace if needed.

f. This sound is likely due to the air shock.

- Lubricate or replace the air shock as needed.

g. This sound is likely from the incline motor.

- Check that the incline motor connection points include Teflon washers.
- Lubricate the incline motor worm screw and connection points with grease.
- Replace the incline motor.