Section Six - Replacement Procedures

Procedure 6.1 - Replacing the Lift Motor, Rotation Sensor or Magnet Hub

Note:
If you need to replace a lift motor that utilizes a hall effect rotation sensor, remove the magnet hub and rotation sensor bracket from the defective lift motor and mount them on the new lift motor. Unless the magnet and rotation sensor are defective, do not remove them from their mounting positions on the magnet hub and sensor bracket. Replacement lift motors are not furnished with the hall effect rotation sensor.

WARNING
Always turn off the circuit breaker and unplug the treadmill before you remove the treadmill hood.

Removing the Lift Motor

1. Remove the hood.

2. Remove the red lift motor lead from the lift motor capacitor, but leave the remaining red wire connected to the capacitor terminal.

3. Remove the black lift motor lead from the lift motor capacitor, but leave the remaining black wire connected to the capacitor terminal.

4. Disconnect the connector on the white lift motor lead.

5. If the treadmill does not have a rotation sensor (C962i or C964i), go to step 8.

6. Remove the revolution sensor plug from the J2 connector jack on the lower PCA.

Note:
When the revolution sensor wire assembly is disconnected from the lower PCA, the zero sense switch must be disconnected as well.

7. Disconnect the two blue wires on the rotation sensor wire assembly from the zero sense switch terminals.

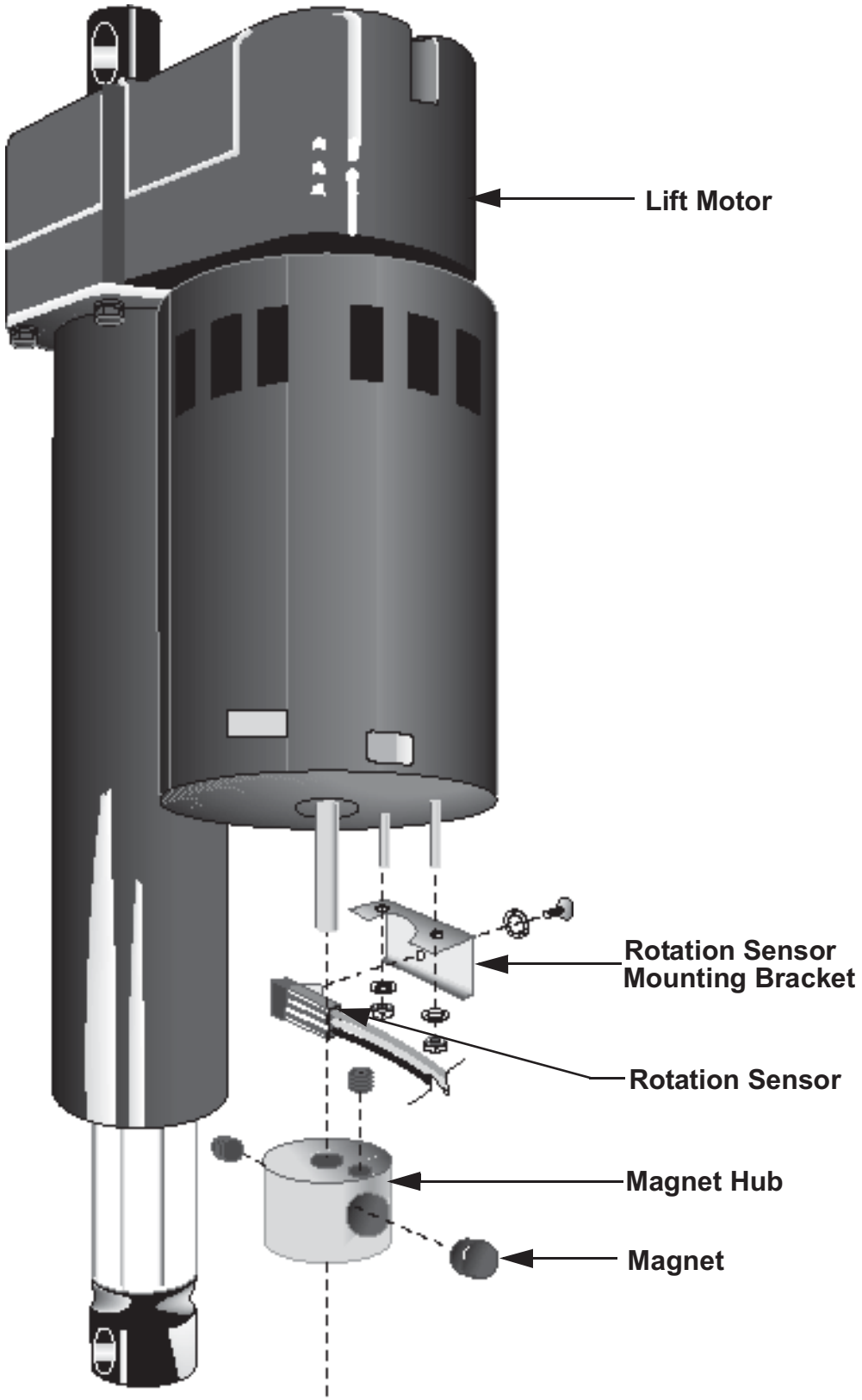
8. Place the treadmill on its left side.

9. Remove the two shoulder screws and nuts that secure the lift motor to the treadmill frame and lift platform (see Diagram 6.1). Remove the lift motor and set it aside.

10. If the treadmill does not have a rotation sensor (C962i or C964i), go to step 25.

11. Remove the set screw that secures the magnet hub to the lift motor. Set aside the magnet hub.

Diagram 6.1 - Exploded view of the Lift Motor (with Rotation Sensor)



Replacing the Magnet

12. Remove the set screw that secures the magnet to the magnet hub. Discard the magnet.

Note:
When you position the magnet in the magnet hub, place the north pole towards the center of the magnet hub. The north pole of the magnet should be marked with a spot of white paint. If the magnet on the treadmill you are servicing is not marked, use either a compass or another magnet to determine the north pole.

13. Position a new magnet in the magnet hub.

14. Tighten the set screw that secures the magnet to the magnet hub.

15. If you are replacing the revolution sensor**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 19.

16. Remove the screw and washer that secure the rotation sensor to the sensor bracket (see Diagram 6.1).

17. Position the revolution sensor at its mounting location.

18. Position the screw and washer that secure the rotation sensor to the sensor bracket. Torque the screw to 8 in-lbs.

19. If you are replacing the lift motor you removed earlier in this procedure**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 25.

Removing and Replacing the Rotation Sensor Bracket

20. Remove the two nuts that secure the sensor bracket to the lift motor.

21. Position the sensor bracket removed in the previous step on the lift motor.

22. Replace the two nuts that secure the sensor bracket to the lift motor.

23. Position the magnet hub on the lift motor so that it is flush with the speed sensor bracket.

24. Replace the set screw that secures the magnet hub to the lift motor.

Replacing the Lift Motor

25. Extend the lift motor actuator 1/2î.

Note:
To extend the lift motor actuator faster, place a screwdriver shaft in the lower mounting hole of the lift motor and rotate the lift motor tube.

26. Position the lift motor at its mounting location.

Note:
When you perform Step 27, replace the lower screw and nut first.

27. Replace the two shoulder screws and nuts that secure the lift motor to the treadmill frame.

Note:
The original nuts used to mount the lift motor are Kep nuts, which do not require a separate washer. If you do not use Kep nuts to mount the lift motor, use washers when you mount the lift motor to the treadmill frame.

28. Return the treadmill to an upright position.

29. Connect the black lift motor lead to the terminal of the lift motor capacitor that already has a black wire.

30. Connect the red lift motor lead to the terminal of the lift motor capacitor that already has a red wire.

31. Connect the connector on the white lift motor lead that connects the lift motor to pin 4 of lower PCA connector J3.

32. Connect the molex connector on the revolution sensor wire assembly to connector J2 on the lower PCA.

33. If the treadmill does not have a rotation sensor (C962i or C964i), go to step 36.

34. Connect the two blue wires on the revolution sensor wire assembly to the terminals on the zero sense switch terminals.

35. Calibrate the treadmill lift assembly as described in Procedure 4.1 of this appendix.

36. Check the operation of the treadmill as described in Section Three of this appendix, then replace the hood as described in Procedure 5.1 of the Commercial Treadmill Service Manual.

Procedure 6.2 - Replacing the Limit Switches, Actuator Shaft or Switch Bracket

Note:
The limit switches and the actuator shaft are mounted on the switch bracket (see Diagram 5.1).

WARNING
Always turn off the circuit breaker and unplug the treadmill before you remove the treadmill hood.

Procedure

1. Remove the hood.

2. If you are removing the actuator shaft or switch**...**

THEN...	**OTHERWISE...**
Skip to Step 12 (to remove the upper limit bracket switch), Step 6 (to remove the down limit switch) or Step 9 (to remove the zero sense switch.	Continue with the next step.

Removing the Upper Limit Switch

WARNING
When power is applied to the treadmill, the wires connected to the upper and lower limit switches carry high voltage. Turn off the treadmill and unplug the power cord from the wall outlet before you perform the following steps.

3. Carefully remove the red wires from the upper limit switch.

Note:
See Diagram 6.2 for limit switch wiring.

4. Remove the screws and washers that secure the limit switch to the switch bracket.

5. If you are removing more than one limit switch**...**

THEN...	**OTHERWISE...**
Continue with the next step to remove the down limit switch or Step 9 to remove the zero sense switch	Skip to Step 11.

Removing the Down Limit Switch

6. Carefully remove the black wires from the down limit switch.

7. Remove the screws and washers that secure the limit switch to the switch bracket (see Diagram 5.1).

8. If you are removing the zero sense switch**...**

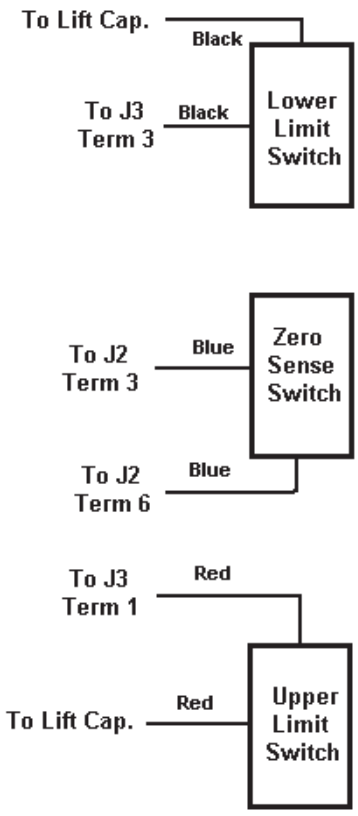
THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 11.

Removing the Zero Sense Switch

9. Carefully remove the blue wires from the zero sense switch.

10. Remove the two screws and washers that secure the limit switch to the switch bracket (see Diagram 5.1).

Diagram 6.2 - Limit Switch Wiring Diagram



11. If you are removing the actuator shaft or switch bracket**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 26.

Removing the Actuator Shaft and Switch Actuator

12. Remove the screw that secures the switch actuator to the actuator shaft. Set aside the screw and switch actuator.

13. Remove the shoulder screw that connects the actuator shaft and actuator block to the lift platform.

Note:
If necessary, hold the actuator shaft with the pliers and support the actuator block firmly with your hand when you perform Step 14.

14. Unscrew the actuator shaft from the actuator block. Set aside the actuator block.

15. Slide the actuator shaft from the switch bracket.

16. If you are removing the switch bracket**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 20.

Removing and Replacing the Switch Bracket

17. Remove the socket head screws and washers that secure the switch bracket to the lift motor platform. Set aside the switch bracket.

18. Position the switch bracket at its mounting location.

19. Replace the socket head screws and washers that secure the switch bracket to the lift motor platform.

Replacing the Actuator Shaft and Switch Actuator

20. Slide the actuator shaft through the switch bracket until it is positioned at its mounting location.

21. Thread the actuator block onto the lower end of the actuator shaft.

Note:
If necessary, use the pliers to secure the actuator block to the actuator shaft.

22. Position the shoulder screw removed in Step 13 through the actuator block and into the base of the lift platform.

23. Tighten the shoulder screw that connects the actuator shaft and actuator block to the lift platform.

24. Position the switch actuator on the top of the actuator shaft.

25. Replace the screw that secures the switch actuator to the actuator shaft.

26. If you must replace one or more of the limit switches**...**

THEN...	**OTHERWISE...**
Continue with the next step to replace the upper limit switch, skip to step 31 to replace the down limit switch or skip to Step 35 to replace the zero sense switch.	Skip to Step 38.

Replacing the Upper Lift Limit Switch

27. Position the limit switch at its mounting location.

28. Replace the screws and washers that secure the limit switch to the switch bracket.

29. Connect the red wires disconnected in Step 3 to the limit switch terminals.

30. If you are replacing more than one limit switch**...**

THEN...	**OTHERWISE...**
Continue with the next step (to to replace the down limit switch) or skip to Step 35 (to replace the zero sense switch.	Skip to Step 38.

Replacing the Down Lift Limit Switch

31. Position the limit switch at its mounting location.

32. Replace the screws and washers that secure the limit switch to the switch bracket.

33. Connect the black wires disconnected in Step 6 to the limit switch terminals.

34. If you are replacing the zero sense switch**...**

THEN...	OTHERWISE...
Continue with the next step.	Skip to Step 38.

Replacing the Zero Sense Switch

35. Position the limit switch at its mounting location.
36. Replace the screws and washers that secure the limit switch to the switch bracket.
37. Connect the blue wires disconnected in Step 9 to the switch terminals.
38. Calibrate the lift assembly as described in Procedure 4.1 of this appendix.
39. Check the operation of the treadmill as described in Section Three of this appendix.

Procedure 6.3 - Replacing the Lift Motor Capacitor

WARNING
Always turn off the circuit breaker and unplug the treadmill before you remove the treadmill hood.

Removing the Lift Motor Capacitor

1. Remove the hood

2. Remove the black and red wires from the lift motor capacitor terminals.

3. Loosen the screw and nut on the capacitor mounting bracket.

Note:
If you are servicing a 240-volt 960 series treadmill, use a phillips screwdriver to loosen and tighten the screw on the capacitor mounting bracket.

4. Remove the capacitor from the mounting bracket.

Replacing the Lift Motor Capacitor

5. Position the lift motor capacitor in the capacitor mounting bracket.

Note:
Wire length and wire assembly configuration may limit the mounting orientations of the lift motor capacitor. Make sure that the wires you removed from the capacitor will reach the capacitor terminals before you perform the next step.

6. Tighten the screw and nut on the capacitor mounting bracket.

7. Connect the wires removed in Step 2 to the capacitor terminals.

Note:
Because the lift motor capacitor is not polarized, you can connect wires to either terminal. However, you cannot mix wire colors on any one terminal.

8. Check the operation of the treadmill as described in Section Three of this appendix.

Procedure 6.4 - Replacing the Lift Platform

WARNING
Always turn off the circuit breaker and unplug the treadmill before you remove the treadmill hood.

Removing the Lift Platform

1. Turn off the treadmill with the circuit breaker, then unplug the power cord from the wall outlet.

2. Place the treadmill on its right side.

Note:
To avoid scratching or marring the treadmill, put a drop cloth underneath the treadmill when you perform Step 2.

3. Remove the lower bolt and nut that secures the lift motor to the lift platform. It is not necessary to remove the lift motor when you remove the lift platform.

4. Skip this step on C962i and C964i treadmills. Remove the bolt that connects the actuator block to the lift platform. (See Diagram 6.3B)

5. Perform this step on C962i and C964i treadmills, only. Remove the nut that retains the lift potentiometer and remove the lift potentiometer. Remove the coupler that connects the lift potentiometer to lift platform shaft. Note the orientation of the flat side of the lift platform shaft. When it is replaced, later in this procedure, it must be remounted in the same orientation. If the lift shaft is incorrectly oriented the lift system calibration will be incorrect. Remove the retaining ring from the lift shaft. Use a thin drift punch or similar tool to carefully drive the pin out of the lift shaft on the left hand (lift potentiometer) side of the lift platform. Remove the lift shaft. (See Diagram 6.3A)

6. Remove the bolt(s) and nut(s) that secure the lift platform to the treadmill frame. Remove the lift platform.

Diagram 6.3A - Lift Shaft Orientation

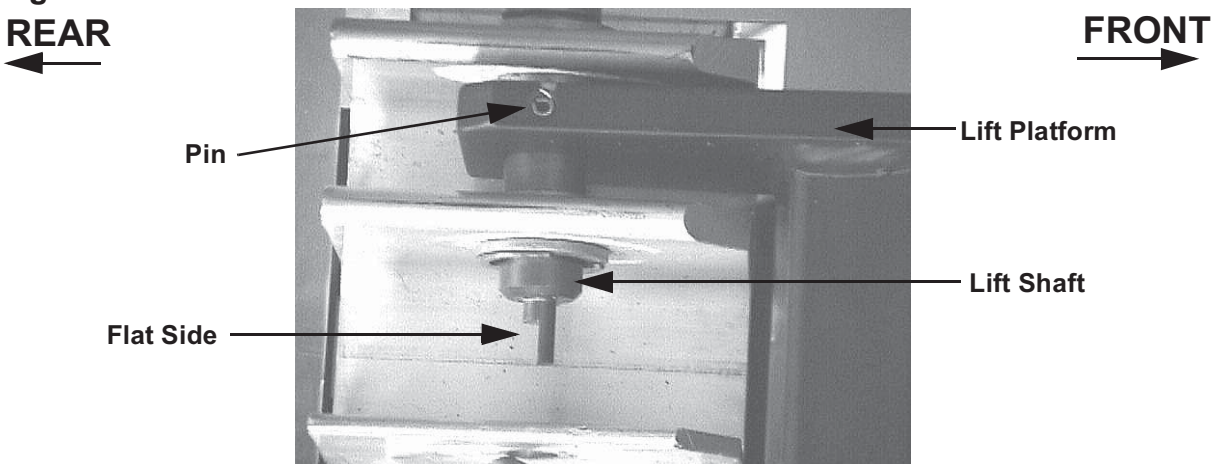
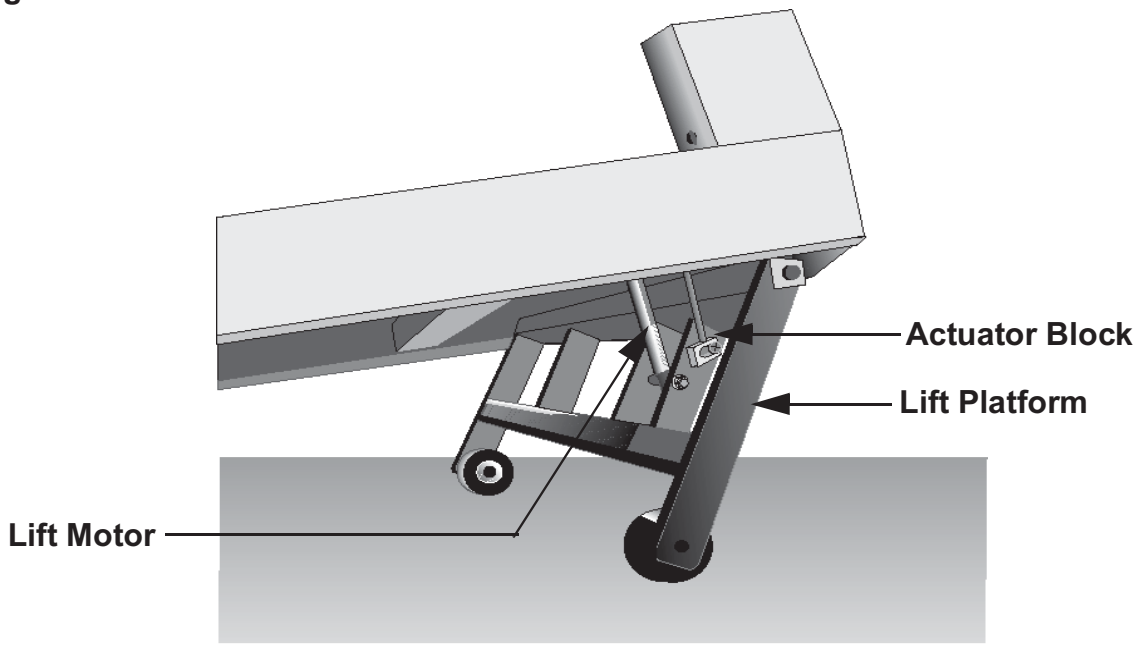


Diagram 6.3B - Lift Platform



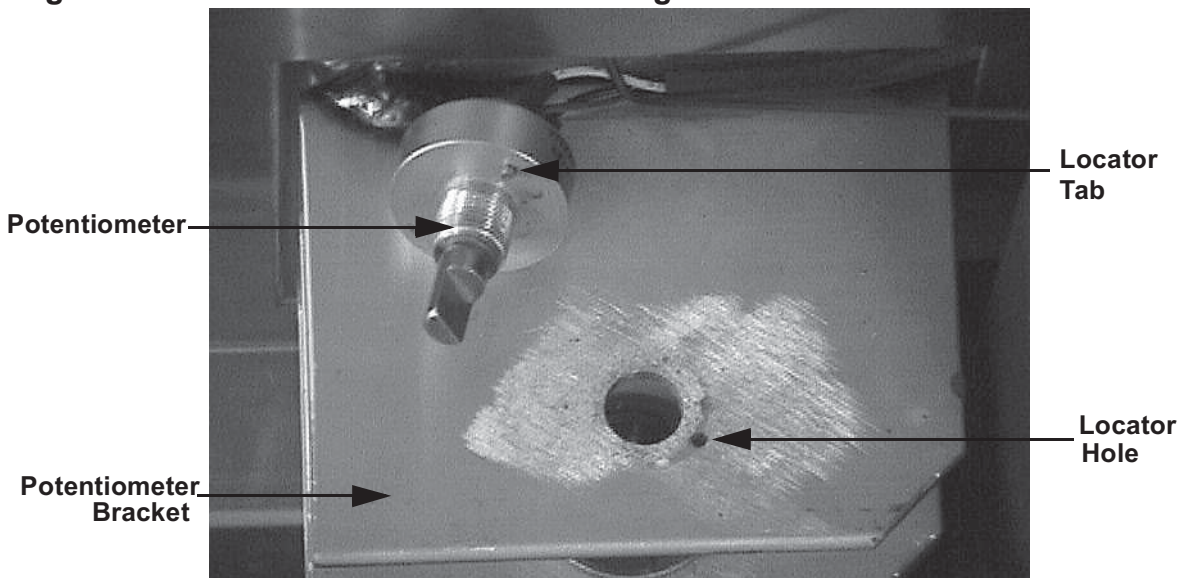
Replacing the Lift Platform

7. With the treadmill still on its right side, position the lift platform at its mounting position.

8. Replace the bolt(s) and nut(s) that secure the lift platform to the treadmill frame.

9. Perform this step on C962i and C964i treadmills, only. Replace the lift shaft. Replace the retaining ring. Orient the lift shaft into the position it was in when removed in step 5. With the lift platform rotated to the front of the treadmill, the flat side of the lift shaft will face to the rear of the treadmill when correctly oriented. See Diagram 6.3A. Align the hole in the lift platform with the hole in the lift shaft and replace the pin. Carefully tap the pin into place with a mallet or hammer. Slide the coupler onto the the lift shaft and replace the lift potentiometer. Align the flat side of the lift potentiometer shaft with the flat side of the lift shaft and and position the lift potentiometer so that the locator tab on the lift potentiometer fits into the locator hole in the lift potentiometer bracket. See Diagram 6.3C. Carefully tighten the lift potentiometer nut. Do not overtighten the lift potentiometer nut. If the coupler has set screws, align the coupler over the junction of the lift potentiometer shaft and the lift shaft and tighten the coupler set screws.

Diagram 6.3C - Lift Potentiometer Mounting



10. Skip this step on C962i and C964i treadmills. Replace the bolt that connects the actuator block to the lift platform.

11. Replace the lower bolt and nut that secures the lift motor to the lift platform.

12. Check the operation of the treadmill as described in Section Three of this appendix.

Procedure 6.5 - Replacing the Drive Belt

WARNING
Always turn off the circuit breaker and unplug the treadmill before you remove the treadmill hood.

Removing the Drive Belt

1. Remove the hood.

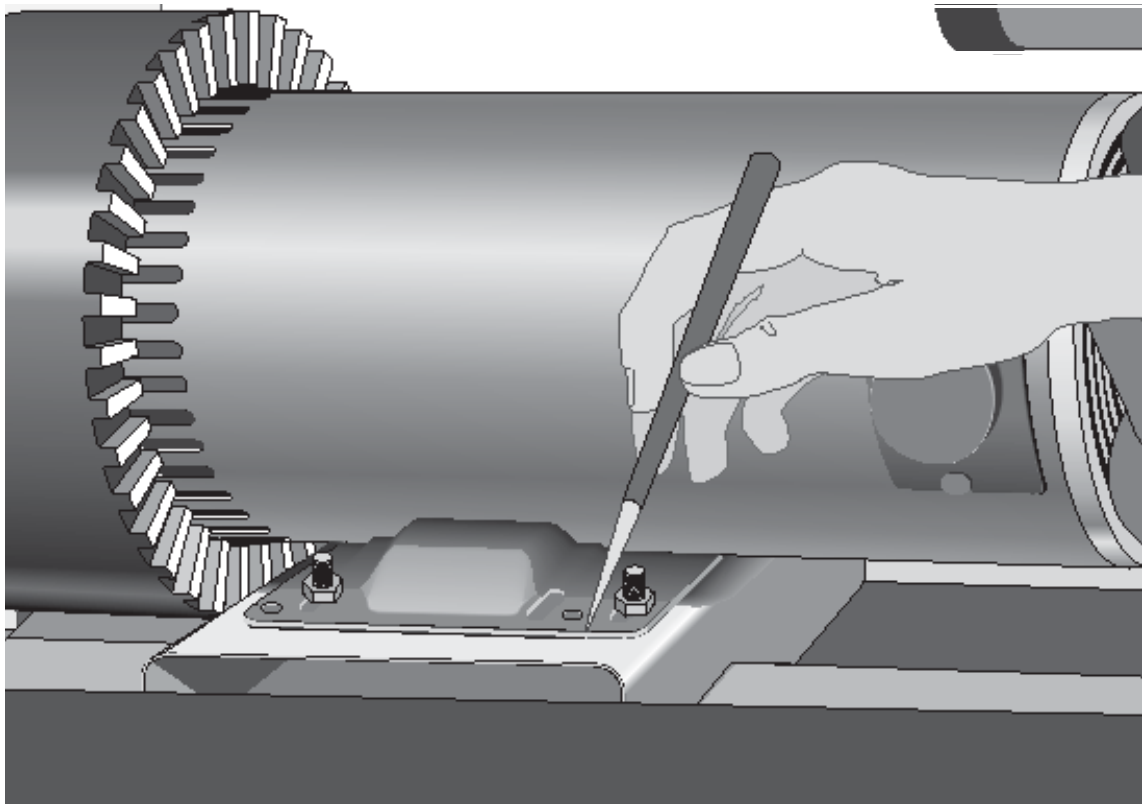
2. Score a line on the drive motor mounting plate that runs the length of the motor pedestal (see Diagram 6.4).

Note:
The line scored on the mounting plate allows you to correctly position the drive motor.

3. If the treadmill is an SCR treadmill, remove the inductor.

4. Loosen the four lock nuts that secure the drive motor pedestal to the drive motor mounting plate.

Diagram 6.4 - Scoring the Drive Motor Pedestal



5. Carefully push the drive motor toward the drive roller.

6. Loosen the bolts threaded through both ends of the drive roller shaft.

7. Remove the socket head screws that secure the top drive roller mounts (see Diagram 6.5).

8. Remove the top roller mounts, then remove the drive belt from the drive roller pulley.

9. Lift the drive roller from the lower roller mounts and slide it from the running belt.

10. Slip the drive belt off the drive motor pulley.

Replacing the Drive Belt

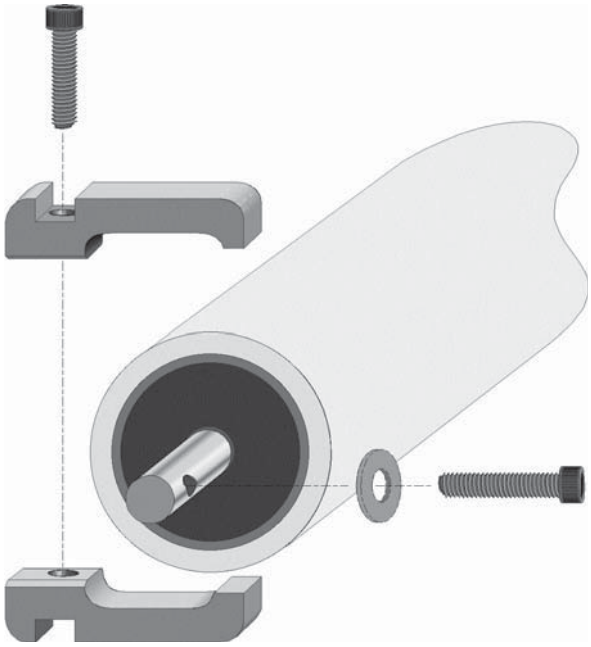
11. Push the drive roller through the running belt. Place the drive belt on the drive roller pulley and place the drive roller on the lower drive roller mounts.

12. Place the top roller mounts on the lower roller mounts.

Note:
When you place the top roller mounts over the ends of the roller shaft, the bolt heads and washers must be outside of the clamp formed by the upper and lower roller mounts.

13. Thread the socket head screws through the top roller mounts and into the lower roller mounts.

Diagram 6.5 - Roller Mount Assembly



14. Tighten the socket head screws.

15. Push and hold the left side of the drive roller toward the drive motor.

Note:
Right, left, front, and *back* are from the perspective of a user standing on the treadmill and facing the electronic console.

CAUTION
Do not crush the washer on the bolt when you perform the next step.

16. Turn the bolt in the left end of the drive roller shaft all the way clockwise and tighten securely.

17. Adjust the right hand bolt until the drive roller is square to the frame.

18. Position the new drive belt on the drive motor pulley.

19. Position the drive motor pedestal parallel to the line scored on the drive motor mounting plate.

20. Tighten the bolts that mount the pedestal to the drive motor mounting plate.

21. Replace the inductor.

22. Inspect and adjust the tension of the drive belt as described in the Commercial Treadmill Service Manual.

Note:
The drive belt will track along either the right or left edge of the pulley grooves. It will not center itself between the pulley flanges.

23. Check the operation of the treadmill, then replace the hood.

Procedure 6.6 - Replacing the Drive Roller or Drive Roller Bearings

WARNING
Always turn off the circuit breaker and unplug the treadmill before you remove the treadmill hood.

Note:
If the drive roller bearings require replacement, you may replace either the bearings or the entire drive roller. Replacing the bearings uses parts that are less expensive but requires more time to perform the replacement.

Removing the Drive Roller

1. Remove the hood.

2. Remove the running belt tension by turning the drive roller adjustment bolts counterclockwise.

3. Remove the drive motor as described in Procedure 6.5.

4. Remove the socket head screws that secure the top drive roller mounts.

5. Remove the top roller mounts, then remove the drive belt from the drive pulley.

6. Lift the drive roller from the lower roller mounts and slide it out of the running belt.

7. Slip the drive belt off the drive motor pulley, then set aside the drive belt until you are ready to install the drive roller.

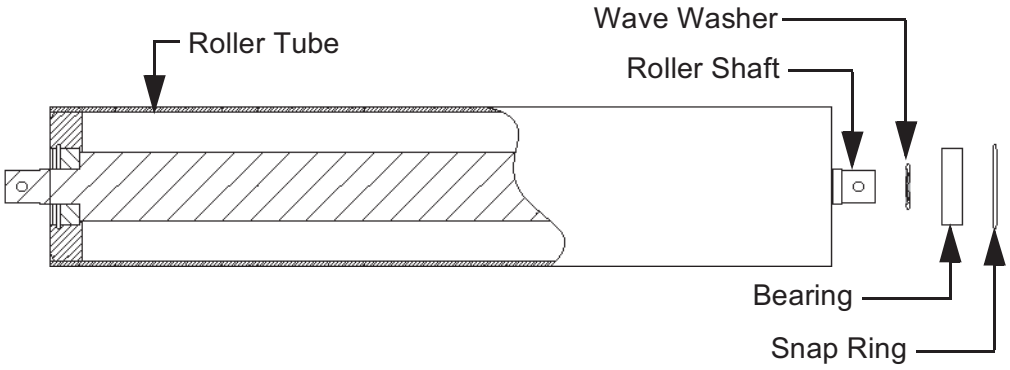
8. If you are replacing the bearings or the bearings and shaft in drive roller**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Remove the bolts threaded through the drive roller shaft; then skip to Step 21.

Removing the Roller Bearings and Shaft

Always remove and replace the bearings and washers as a set. It is not necessary to replace the shaft if you are replacing the bearings. However, if you are replacing the shaft, you must also replace the bearings and washers.

Diagram 6.6 - Exploded View of a Roller



9. Remove the snap ring from both ends of the roller (see Diagram 6.6).

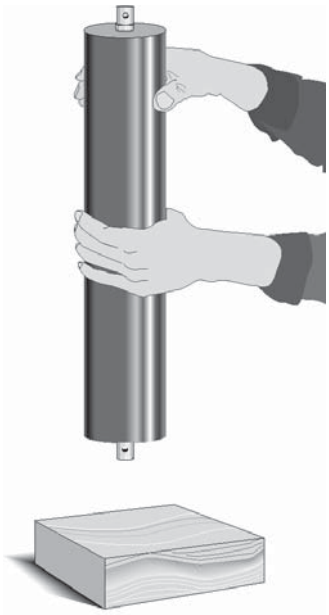
10. Hold the roller in a vertical position 3ñ4 inches above a block of wood. The block of wood must be on a hard solid surface such as a floor. (see Diagram 6.7

11. Hold the roller with the end of the roller upward, and drop the roller onto the block of wood. The roller may need to be dropped several times to drive the bearing out of the roller.

12. Remove the bearing from the opposite end of the roller in the same manner. Care must be taken to keep the roller shaft in the bearing because the shaft is no longer being retained on the lower end of the roller as it is dropped onto the block of wood.

13. Remove the shaft from the roller.

Diagram 6.7 - Removing a Bearing



Replacing the Roller Bearings and Shaft

You will need an assistant to perform the following steps.

14. Have an assistant support the roller against a work surface. One end of the roller must be flush with the work surface.

15. Place a bearing on the roller, then position the bearing replacement tube against the outer race of the bearing

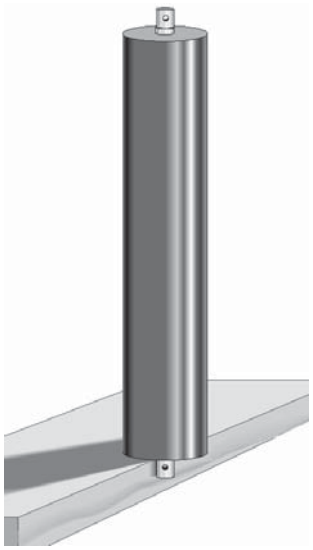
Note:
A ten inch length of 2 inch O.D. pipe with a cap threaded onto one end, will serve as a bearing replacement tool. The open end will be placed against the bearing and the end with the capped end will be struck with the hammer.
.
CAUTION
The bearing must go squarely into the roller tube. If the bearing is not square in the roller tube, you will be unable to insert the bearing.

16. Set the roller tube on a solid work surface. Place a new bearing in the bearing pocket on one end of the roller tube. Using the bearing replacement tool and a hammer or mallet, gently tap the bearing into the tube. The bearing will be below flush and the snap ring groove will be exposed when the bearing is properly set into the roller tube.

17. Using the snap ring pliers, install the snap ring.

18. Place a wave washer onto roller shaft. Slide the roller tube down over the shaft until the end of the shaft protrudes through the bearing. Invert the roller tube while holding the shaft in place. Set the roller tube on a block of wood as shown in Diagram 6.8.

Diagram 6.8 - Replacing the Roller Bearing



19. While an assistant supports the roller tube, place a wave washer on to the shaft. Slide the new bearing onto the upper end of the shaft. Using the bearing replacement tool and a hammer or mallet, gently tap the bearing into the tube. The bearing will be below flush and the snap ring groove will be exposed when the bearing is properly set in the roller tube.

20. Using the snap ring pliers, install a retaining ring next to the bearing just mounted in the roller.

Replacing the Drive Roller

21. Thread the drive roller adjustment bolts into the drive roller shaft.

22. Visually inspect the drive belt for wear, cracks, or other damage. Replace the drive belt if required.

23. Slide the drive roller through the running belt. Place the drive belt on the drive roller pulley and place the drive roller on the lower drive roller mounts.

24. Place the top roller mounts on the lower roller mounts.

Note:
When you place the top roller mounts over the ends of the roller shaft, the bolt heads and washers must be outside of the clamp formed by the upper and lower roller mounts.

25. Thread the socket head screws through the top roller mounts and into the lower roller mounts and tighten.

26. Push and hold the left side of the drive roller toward the drive motor.

Note:
Right, left, front, and *back* are from the perspective of a user standing on the treadmill and facing the electronic console.

27. Securely tighten the left hand drive roller adjustment bolt. It is important that the bolt pulls drive roller shaft all the way forward in the roller mount.

28. While applying rearward pressure to the drive roller, adjust the right hand drive roller adjustment bolt until the drive roller is square relative to the treadmill frame.

29. Position the drive belt on the drive motor pulley.

30. Position the drive motor parallel to the line scored on the motor mounting pedestal.

31. Tighten the four bolts that mount the pedestal to the drive motor mounting plate.

32. Inspect and adjust the tension of the drive belt as described in Procedure 3.2 of the Commercial Treadmill Service Manual.

33. Inspect and adjust the tension, tracking, and alignment of the running belt as described in Procedure 3.1 of the Commercial Treadmill Service Manual.

34. Check the operation of the treadmill as described in Section Three of this appendix, then replace the hood.

Procedure 6.7 - Replacing the Take-Up Roller or Take-Up Roller Bearings

Removing the Take-Up Roller

1. Remove the screws that secure the right and left end caps to the treadmill frame. Set the end caps and end cap mounting hardware aside.

2. Place a running belt gauge on each side of the running belt and set the gauges a mid range.

3. Remove the running belt tension by turning the take up roller tension adjustment bolts counterclockwise.

4. Turn the running belt tracking bolt counterclockwise 2ñ3 turns.

5. Remove the socket head bolts that secure the top take-up roller mounts.

6. Remove the top roller mounts, then lift the take-up roller from the lower roller mounts.

7. If you are replacing the bearings or the bearings and shaft in the take-up roller**...**

THEN...	**OTHERWISE...**
Continue with the next step. you perform the following steps.	Remove the tension limiting bolt and running belt tracking bolt from the take-up roller shaft. Skip to Step 19.

Removing the Roller Bearings and Shaft

Always remove and replace the bearings and washers as a set. It is not necessary to replace the shaft if you are replacing the bearings. However, if you are replacing the shaft, you must also replace the bearings and washers.

8. Remove the snap ring from one end of the roller (see Diagram 6.6).

9. Hold the roller in a vertical position 3ñ4 inches above a block of wood. The block of wood must be on a hard solid surface such as a floor. (see Diagram 6.7).

10. Hold the roller with the end of the roller that has had the snap ring removed upward, and drop the roller onto the block of wood. The roller may need to be dropped several times to drive the bearing out of the roller.

11. Remove the bearing from the opposite end of the roller in right same manner. Care must be taken to keep the roller shaft in the bearing because the shaft is no longer being retained on the lower end of the roller as it is dropped onto the block of wood.

12. Remove the shaft from the roller.

Replacing the Roller Bearings and Shaft

You will need an assistant to perform the following steps.

13. Have an assistant support the roller against a work surface. One end of the roller must be flush with the work surface.

14. Place a bearing on the roller, then position the bearing replacement tube against the outer race of the bearing

Note:
A ten inch length of 2 inch O.D. pipe with a cap threaded onto one end, will serve as a bearing replacement tool. The open end will be placed against the bearing and the end with the capped end will struck with the hammer.
.CAUTION
The bearing must go squarely into the roller tube. If the bearing is not square in the roller tube, you will be unable to insert the bearing.

15. Set the roller tube on a solid work surface. Place a new bearing in the bearing pocket on one end of the roller tube. Using the bearing replacement tool and a hammer or mallet, gently tap the bearing into the tube. The bearing will be below flush and the snap ring groove will be exposed when the bearing is properly set into the roller tube.

16. Using the snap ring pliers, install the snap ring.

17. Place a wave washer onto roller shaft. Slide the roller tube down over the shaft until the end of the shaft protrudes through the bearing. Invert the roller tube while holding the shaft in place. Set the roller tube on a block of wood as shown in Diagram 6.8.

18. While an assistant supports the roller tube, place a wave washer on to the shaft. Slide the new bearing onto the upper end of the shaft. Using the bearing replacement tool and a hammer or mallet, gently tap the bearing into the tube. The bearing will be below flush and the snap ring groove will be exposed when the bearing is properly set in the roller tube.

19. Using the snap ring pliers, install a retaining ring next to the bearing just mounted in the roller.

Replacing the Take-Up Roller

20. Slide the take-up roller through the running belt, then place the take-up roller on the lower roller mounts.

21. If the treadmill uses a tension limiting bolt assembly, thread it into the right end of the take-up roller shaft.

22. Thread the running belt tracking bolt through the left end of the take-up roller shaft.

Note:
When you replace the bolts in the take-up roller, the tension limiting bolt must be on the right side of the treadmill when the take-up roller is installed on the treadmill. The belt tracking bolt must be on the left side of the treadmill.

23. Place the top roller mounts on the lower roller mounts.

Note:
When you place the top roller mounts over the ends of the roller shaft, the bolt heads and washers must be outside of the clamp formed by the upper and lower roller mounts.

24. Thread the socket head bolts through the top roller mount and into the lower roller mount.

25. Tighten the socket head bolts that secure the top and lower roller mounts.

26. Replace the screws that secure the right and left end caps to the treadmill frame.

27. Tension the running belt until both gauges are again at mid range.

28. Inspect and adjust the tension, tracking, and alignment of the running belt as described in Procedure 3.1 of the Commercial Treadmill Service Manual.

29. Check the operation of the treadmill as described in Section Three of this appendix.

Procedure 6.8 - Replacing the Safety Switch Assembly

The exploded view of the safety switch assembly is shown in Diagram 6.9.

Removing the Safety Switch Cam

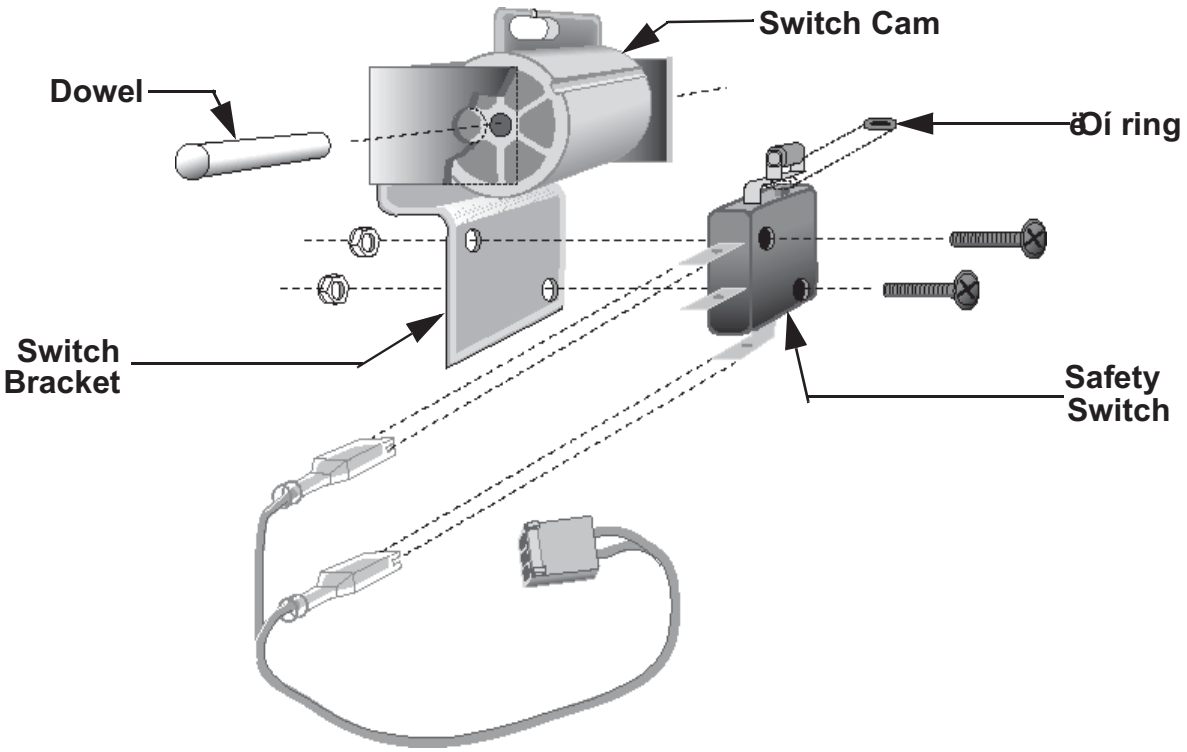
1. Remove the three screws that secure the upper display housing to the display housing mounting plate.

2. Place your right hand on the two right upper display housing mounting tabs. Place your left hand on the left tabs. Push the right tabs towards the right targa upright and the left tabs towards the left targa upright as you lift the display housing from the mounting plate. Support the display housing on the front handrails.

3. If you are removing the safety switch cam as well as the safety limit switch**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 6.

Diagram 6.9 - Safety Switch Assembly



4. Disconnect the safety cord from the switch cam (see Diagram 6.10).

5. Remove the dowel that secures the switch cam to the switch mounting bracket (see Diagram 6.10). Set aside the safety switch cam.

Removing the Safety Limit Switch

6. Disconnect the safety switch wiring.

7. Remove the screws and nuts that secure the safety switch to the switch mounting bracket.

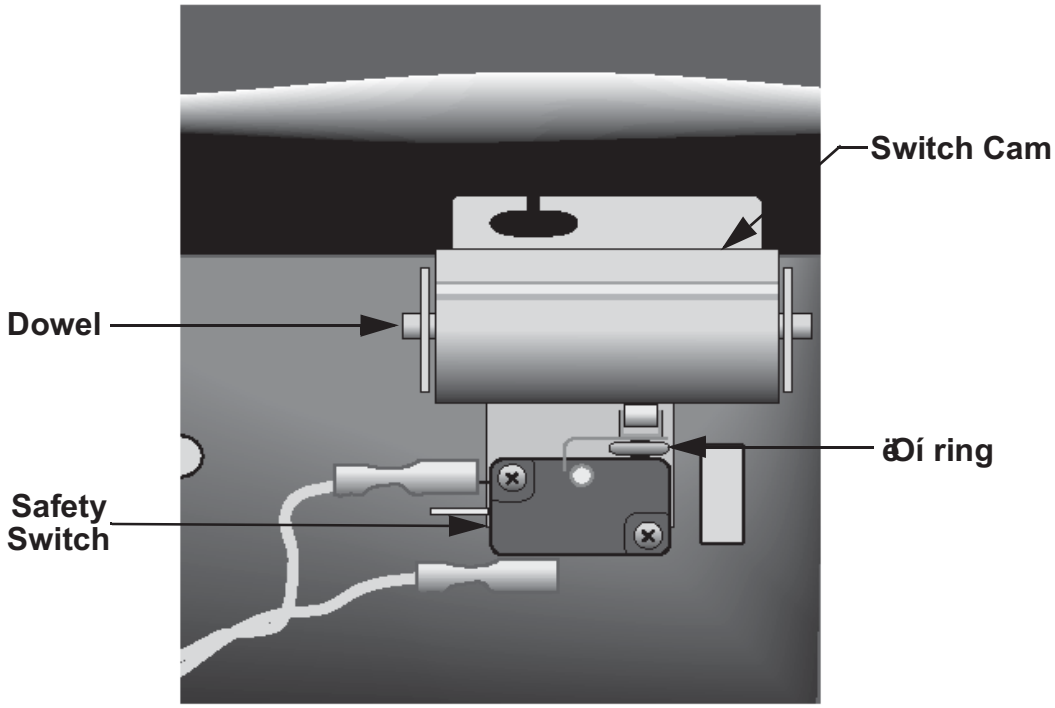
8. Remove the small rubber ring positioned between the safety switch actuator and the switch cam.

Replacing the Safety Switch

9. Position the small rubber ring removed in the previous step between the safety switch actuator and the switch cam.

10. Position the safety limit switch at its mounting location.

Diagram 6.10 - Safety Switch Cam and Safety Cord Bracket



11. Replace the screws and nuts that secure the safety limit switch to the switch mounting bracket.

12. Connect the safety switch wire assembly to the upper PCA.

Replacing the Safety Switch Cam

13. If the safety switch cam operates too freely, the switch may operate unintentionally. If desired a friction pad (Precor part # 38628-101) may be inserted between the safety switch cam and switch mounting bracket.

14. Position the safety switch cam at its mounting location.

15. Replace the dowel that secures the switch cam to the switch mounting bracket.

Note:
One end of the dowel will go into the switch cam easier than the other end.

16. Line up the tabs on the display housing with the holes on the display housing mounting plate.

17. Gently press the display housing onto the mounting plate until the tabs are pushed into the holes.

18. Connect the safety cord on the switch cam.

19. Replace the screws that secure the upper display housing to the display housing mounting plate.

20. Check the operation of the treadmill as described in Section Three of this appendix.

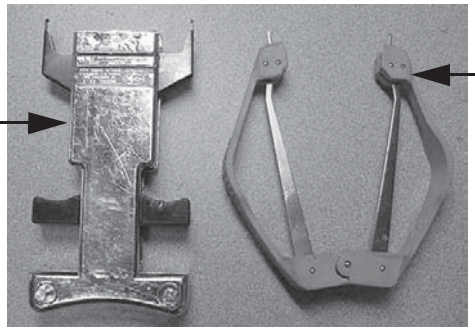
Procedure 6.9 - Replacing the PROM

Anti-static kits (part number 20024-101) can be ordered from Precor.

1. The PROM and the associated printed circuit assembly (PCA) are static sensitive. Anti-static devices must be used and all anti-static precautions must be followed during this procedure.

2. Remove the printed circuit assembly per its associated procedure.

3. Currently we are using two styles of IC software packages. they are a 28 pin dual in line package (DIP28) and a forty-four pin square package (PLCC44). Each of these packages should be removed with a proper IC removal tool (see the illustrations below)



4. The ICís may inserted into their socket by hand by carefully aligning the notch on the IC with the notch on the IC socket and carefully pressing the IC into its socket. See the illustrations below for the alignment notches. Care must be taken that the IC legs on a DIP28 are all aligned in the socket to prevent the legs from bending when inserted. The PLCC44 IC must be carefully aligned squarely in its socket or it will not insert. Do not force the IC into its, socket. If it does not insert easily, remove the it and re-align it in its socket.