

C532 Elliptical Fitness Crosstrainer

Warning: This service manual is for use by Precor trained service providers only. If you are not a Precor Trained Servicer, you must not attempt to service any Precor Product; Call your dealer for service.

This document contains information required to perform the majority of troubleshooting, and replacement procedures required to repair and maintain this product.

This document contains general product information, software diagnostic procedures (when available), preventative maintenance procedures, inspection and adjustment procedures, troubleshooting procedures, replacement procedures and electrical block and wiring diagrams.

To move directly to a procedure, click the appropriate procedure in the bookmark section to the left of this page. You may “drag” the separator bar between this page and the bookmark section to change the size of the page being viewed.

Section One - Things You Should Know

Right, Left, Front, and Back Conventions

In this manual, right, left, front, and back are from the perspective of a user standing on the C532, facing the display enclosure.

Warning and Caution Statements and General Safety Guidelines

Warning statements indicate a particularly dangerous activity. Warning statements you will find in this manual include:

- To remove power from the C532, the power cord must be disconnected from the wall outlet. Always ensure that the C532 is unplugged from the wall outlet when you inspect or adjust the C532, or when you isolate, remove, or replace a C532 component.
- Removing the covers exposes high voltage components and potentially dangerous machinery. Exercise extreme caution when you perform maintenance procedures with the hood removed.
- During service operations you will be very close to moving machinery and high voltage components. When you perform maintenance procedures with the covers removed, remove jewelry (especially from ears and neck), tie up long hair, remove neck ties, and do not wear loose clothing.
- Exercise caution when touching any wire or electrical component during C532 operation.

Caution statements are intended to prevent damage to the C532 as a result of the current activity. Caution statements included in this manual are listed below:

Safety guidelines you should know and follow include:

- Read the owner's manual and follow all operating instructions.
- Visually check the C532 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 C532.
- When operating the C532, 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.
- Do not rock the unit. Do not stand or climb on the handlebars, display enclosure, or cover.
- Do not set anything on the handlebars, display enclosure, or cover. Never place liquids on any part of the C532.

- To prevent electrical shock, keep all electrical components, such as the 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.

General Information

For the latest exploded view, part number and part pricing information, visit the Precor dealer website at "www.precor.com/Dealer".

Section Two - Preventive Maintenance

Preventive maintenance measures are either scheduled or unscheduled. Scheduled preventive maintenance activities are included here so that you are aware of preventive measures performed on a regular basis.

Regular Preventive Maintenance (Owner)

Cleanliness of the EFX and its operating environment will keep maintenance problems and service calls to a minimum. Precor recommends that you perform the following preventive maintenance schedule.

After Each Use

- Turn off and unplug the EFX.
- Wipe down the covers, handlebars, stairarm wheels and stairarm ramps with a damp cloth.

Daily Maintenance

Clean the EFX's frame, covers, stairarms, stairarm ramps and stairarm wheels using water or "Simple Green". Wipe the surface of the electronic console with a damp sponge or soft cloth. Dry with a clean towel. "Simple Green" is the only cleaning solution that has been tested and approved for use on the C532 ramps. Use of any other cleaner, may cause degradation of the ramp anodizing and void the ramp warranty. The use of an acid (citric) based cleaner will cause ramp anodizing damage and is not authorized by Precor.

Weekly Maintenance

- Vacuum underneath the EFX, following these steps:
 1. Turn off the EFX with the circuit breaker, then unplug it from the wall outlet
 2. Place the EFX on its side.

Note:

Place a drop cloth under the EFX to protect the flooring and to ensure that the EFX handrail is not scratched or damaged.

3. Vacuum the rug or damp mop the floor.
4. Make sure that the floor is dry before returning the EFX to an upright position.

Quarterly Maintenance

1. Remove front and rear covers.
2. Clean and lubricate the lift motor drive screw with bearing grease.
3. Check the step up and input belt tension as in Procedure 5.3.
4. Replace both covers.

On-Site Preventive Maintenance (Service Technician)

When you are called to service a EFX, perform these preventive maintenance activities:

- Perform the software diagnostics. Check LED and keypad function. Record the odometer reading.
- Check speed sensor function (is the stride rate displayed when the unit is in operation?). If not, see Procedure 6.3
- Does the ramp (lift) operate smoothly and quietly? If not, see Procedure 6.4.
- Visually inspect the drive belts for cracks, fraying or excessive wear.
- Inspect the power cord. If the power cord is damaged, install a new power cord.
- Visually examine all wires and check connectors and wire connections. Secure connections and replace wiring as necessary.

Procedure 3.1 - Software Access Codes

The C532 uses the standard access codes to provide access to the various software features. In using the standardized access codes the keys are hypothetically numbered left to right with key #1 on the far left and key #7 on the far right. The standard access codes use all sequential key presses. The allowable delay between key presses is short. If too much time is taken between key presses the access procedure will be aborted. If the access is aborted, it will be necessary to start over from the beginning. See Diagram 3.1.

Standard Access Codes

Diagnostics	Keys RESET,5,1,7,6,5,7,6,1
Odometer	Keys RESET,6,5
Club Settings	Keys RESET,5,6,5,1,5,6,5

Procedure 3.2 - Accessing the Diagnostic Program

The EFX diagnostic software cycles through the following tests:

- LED Diagnostics
- Keypad Test
- Heart Rate Test
- Lift Calibration Number

Procedure

1. Plug the power cord into the wall outlet, then turn on the EFX with the circuit breaker.
2. Press keys **RESET,5,1,7,6,5,7,6,1.**, sequentially.
3. Watch the upper display as the LED test progresses. The test will illuminate every LED on the display. The test will illuminate the LED's in a specific pattern. When you are familiar with the pattern, it is easy to determine when a LED does not illuminate.
4. If you do not observe the LED illumination sequences described in Step 3...

THEN...

Replace the upper PCA as described in Procedure 7.2.

OTHERWISE...

The LED test passed successfully; continue with the next step.

5. Press the **ENTER** key to continue.
6. Press each of the keys on the display housing, See Diagram 3.1. A bar will illuminate on the display that corresponds with each of the keys pressed. Press the **RESISTANCE ▼** and **CROSSRAMP ▼** keys simultaneously, to continue.
7. If heart rate is installed and it is receiving a signal from a chest strap or test transmitter, the heart rate will be displayed. If heart rate is not installed, the message **HEART RATE NOT INSTALLED** will scroll across the display.
8. Press the **ENTER** key to continue.
9. The lift calibration number will be displayed. The lift calibration number indicates the physical lift position. The lift calibration number is used in Procedure 5.2 to calibrate the lift system.
10. Press the **ENTER** key to exit the diagnostics program.

Diagram 3.1 - C532 Display



Procedure 3.3 - Displaying the Odometer

Procedure

1. Plug the power cord into the wall outlet, then turn on the EFX with the circuit breaker.
2. With the **PRECOR C532** banner scrolling, press keys **RESET,6,5**, sequentially until the message **C532 ODOMETER** scrolls across the display window.
3. The following message will scroll across the display: **TOTAL STRIDES = XXXX**. Total strides is the sum total of strides recorded.
4. Press the **ENTER** key to continue.
5. The following message will scroll across the display: **TOTAL HOURS = XXXX**. Total hours is the total number of hours the unit has been used.
6. Press the **ENTER** key to continue.
7. The software version followed the part number of the prom will scroll across the display.
8. Press the **ENTER** key to continue.
9. The error log will be displayed. The errors will be displayed with the most recent error in position 1 and the oldest error in position 5. Use either **▲** or **▼** key to scroll through the error log.
10. Press the **ENTER** key to exit the odometer program.

Procedure 3.4 - Club Settings

1. Enter the club settings by pressing keys **RESET,5,6,5,1,5,6,5**, sequentially.
2. Either **US STANDARD** or **METRIC** will scroll across the display, indicating the current setting. Use the **▲** or **▼** keys to toggle the setting. **US STANDARD** will use miles, miles per hour and pounds as the units of measurement. **METRIC** will use kilometers, kilometers per hour and kilograms as the units of measurement.
3. Press **ENTER** to continue.
4. The maximum workout time will be displayed.
5. The maximum workout time is adjustable between 10 and 240 minutes. If you wish to change the maximum workout time...

THEN...

Use the **▲** or **▼** keys to select the new maximum workout time; then continue with the next step.

OTHERWISE...

Continue with the next step.

6. Press **ENTER**, to continue.
7. The pause time will be displayed. The pause time is the length of time from the point that the **PAUSE** key is pressed until the unit resets to the start up point if the unit is left inactive. The pause time is adjustable between 1 and 120 seconds. The pause time may be selected with either of the **▲** or **▼** keys.
8. Press **ENTER** to continue.
9. The message **SET SCROLL SPEED** will scroll across the display. Use the **▲** or **▼** keys to change the scrolling speed. The scrolling speed of the above message will change accordingly.
10. When the desired scrolling speed as been selected, press the **ENTER** key to exit.

Procedure 3.5 - Documenting Software Problems

When a problem is found with either the software or upper or lower PCA's, record the information listed below. If you isolated the problem to either the PROM, upper PCA, or lower PCA, include the information you recorded with the malfunctioning PROM or PCA when you ship it to Precor.

When a problem occurs, record the following information:

- Model and serial number
- Software version number

Note:

Look at the PROM mounted on the upper PCA. A label on the PROM indicates the software version number.

- User and program number running when the problem occurred
- A description of:
 - a What happened or failed to happen.
 - b The action taken by the user just before the problem occurred.
 - c Problem-related information (such as how far into the program the problem occurred, the work level being used when the problem occurred, etc.).
- The frequency of occurrence.

Section Four - Checking EFX C532 Operation

This section provides you with a quick method of checking EFX operation. Check the operation of the EFX at the end of most maintenance procedures.

Procedure

1. Plug the power cord into the wall outlet and set the on/off switch in the “on” position.
2. When the **PRECOR C532.....WORK OUT SMARTER** banner scrolling, press **QUICK START**.
3. If the ramp is not currently at level 4, the ramp will automatically move to level 4, when walking on the unit is initiated.
4. Select Resistance Level 1.
5. Operate the EFX for 4–5 minutes. As you operate the EFX, concentrate on the operating sounds made by the unit. Be on the alert for unusual rubbing, hitting, grinding, or squeaking noises.
6. If the EFX makes unusual noises or the electronic display does not change appropriately, troubleshoot per section 6.
7. Press the **RESISTANCE ▲** key until you reach Resistance Level 10. Operate the EFX for another 2–3 minutes.
8. If the EFX resistance does not change or the operation of the EFX feels inconsistent compared with Resistance Level 1, troubleshoot per section 6.
9. Press the **RESISTANCE ▲** key until you reach Resistance Level 20. Operate the EFX for another 2–3 minutes.
10. If the resistance of the C532 does not change or the EFX operation feels inconsistent with Resistance Levels 1 and 10, troubleshoot per Procedure 6.5.
11. Check the LED’s mounted on the upper PCA and the function keys displayed on the electronic console by performing Procedure 2.1.
12. Press the **CROSSRAMP ▲** key while viewing the electronic console. Confirm that the foot pads incline and the ramp display increments to 14 as the **CROSSRAMP ▲** key is pressed.
13. Press the **CROSSRAMP ▼** key while viewing the electronic console. Confirm that the foot pads return to a level position and the ramp display decrements to 1 as the **CROSSRAMP ▼** key is pressed.

14. If the ramp system of the C532 does not operate properly, troubleshoot per Procedure 6.4.
15. Turn off the EFX with the circuit breaker, then unplug the power cord from the wall outlet.

Procedure 5.1 - Measuring the Resistance of an Eddy Current Magnet

Caution

Remove power from the EFX before you measure magnet resistance.

Procedure

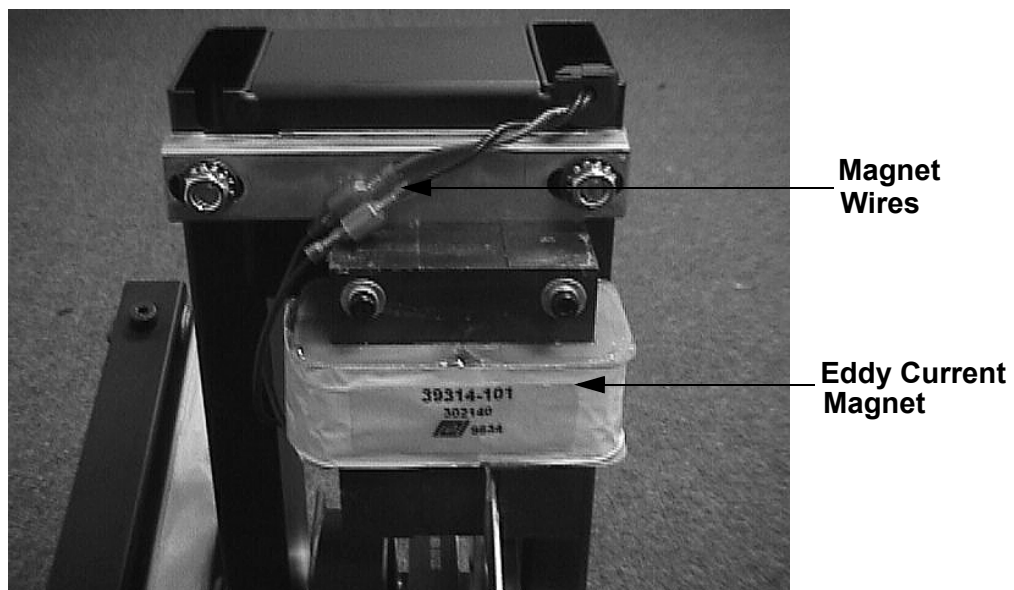
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

1. Remove the rear cover as described in Procedure 7.1.
2. Set the ohmmeter to a range that will conveniently read up to 125 Ω .
3. Disconnect the magnet wires. Measure the resistance between the two magnet wires.

Diagram 5.1 - Eddy Current Magnet



Note:

The resistance of the magnets will be higher than optimum (90 - 110 Ω) when they are warm.

4. If the resistance measures significantly less than 90 Ω or significantly more than 110 Ω ..

THEN...

Replace the magnet as described in Procedure 7.18.

OTHERWISE...

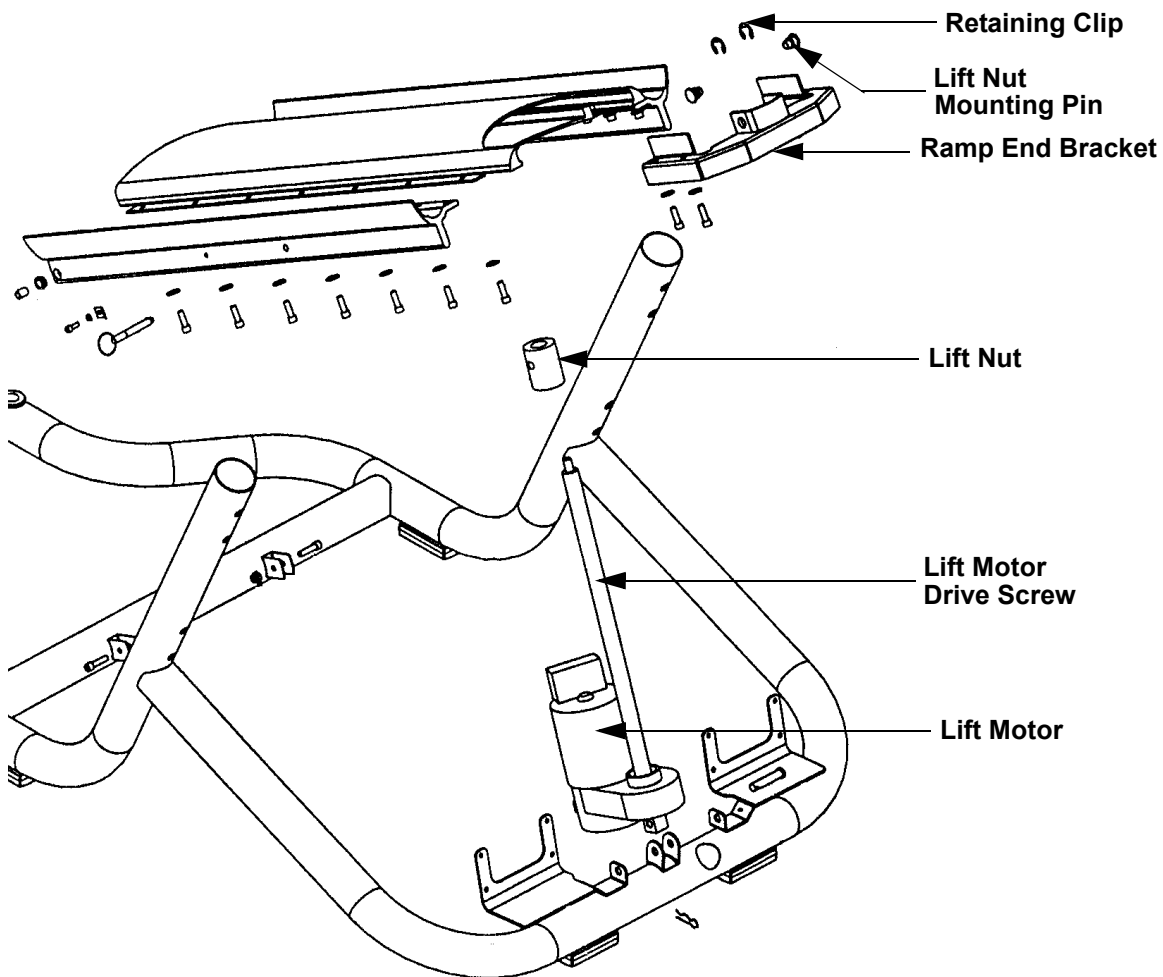
Reconnect the magnet wires, then continue with the next step.

5. Re-install the rear cover as described in Procedure 7.1, then check the operation of the unit as described in Section Four.

Procedure 5.2 - Calibrating the Lift Motor

1. In order to calibrate the lift motor, it is necessary to disconnect the lift motor from the ramp assembly.
2. Set the on/off switch in the "off" position. Remove the screws that retain the front cover and remove the front cover.
3. Remove the retaining clip from each lift nut mounting pin. Support the lift ramp assembly and remove the lift mounting pins from the lift nut. Raise the ramp until the ramp end bracket clears the lift nut and rotate the lift motor forward. Lower the lift ramp assembly until it is resting on the frame. (See Diagram 5.2)

Diagram 5.2 - Lift Motor Mounting



4. Set the on/off switch in the “on” position. Enter the diagnostics routine per Procedure 2.1. After the L.E.D. test is complete, press the **ENTER** key to display the lift calibration number. Operate the **CROSSRAMP ▲** or **CROSSRAMP ▼** keys as required to set the lift calibration number to 201.

Caution

Do not allow the lift motor drive screw to rotate while setting the distance in step 5.

5. Rotate the lift nut on the lift motor drive screw until six threads are exposed above the lift nut. If the lift motor drive screw rotates the lift calibration number will no longer be 201. The lift calibration number must be 201 and the distance measurement must be correct for the lift calibration to be correct.
6. Set the on/off switch in the “off” position.
7. Raise the lift ramp assembly to a convenient height and lower the ramp end cap over the lift nut and insert the lift pins into the lift nut. Do not rotate the lift nut any more than is necessary to align the holes in the lift nut with the holes in the ramp end cap. Replace both retaining clips on the lift mounting pins.
8. Set the on/off switch in the “on” position. Thoroughly test all lift related functions per Section Four.
9. Set the on/off switch in the “off” position, replace the front cover per Procedure 7.1.

Procedure 5.3 - Inspecting and Adjusting Belt Alignment and Tension

Procedure

1. Set the on/off switch in the "off" position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Remove both stairarms as described in Procedure 7.22.
4. Operate the unit by rapidly rotating a crankarm by hand. As the unit operates watch the drive belts for proper alignment. The belts should operate parallel to each other and the belts should maintain even spacing.
5. If the belts are not correctly aligned...

THEN...

Continue with the next step.

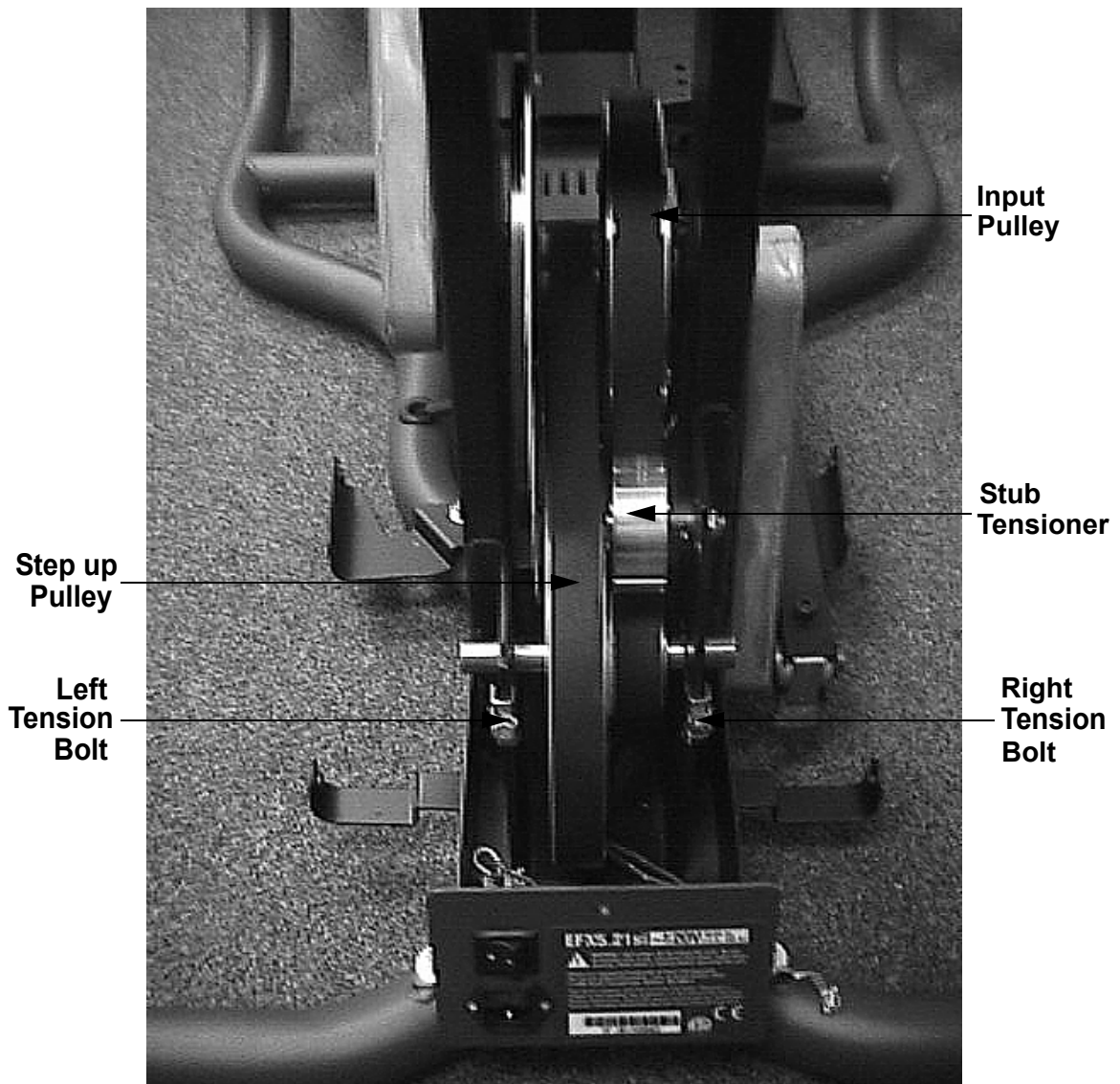
OTHERWISE...

Skip to step 13

6. Refer to Diagram 5.3 for the following belt alignment steps. The right and left tension bolts have locking tabs. If necessary, use pliers to bend the locking tabs out of the way so that the bolts can be turned.
7. If the step up pulley belt is out of alignment to the right, continue with step 9.
8. If the step up pulley belt is out of alignment to the left, continue with step 11.
9. Turn the left tension bolt 1/4 turn clockwise, then repeat step 4. If turning the left adjustment bolt 1/4 of a turn was not sufficient, turn the right tension bolt 1/4 of a turn counterclockwise.
10. Repeat step 8, alternating between the left and right tension bolts until the alignment is correct. Continue with step 13.
11. Turn the right tension bolt 1/4 of a turn clockwise, then repeat step 4. If turning the left adjustment bolt 1/4 of a turn was not sufficient, turn the right tension bolt 1/4 turn counterclockwise.
12. Repeat step 11, alternating between the right and left tension bolts until the alignment is correct.

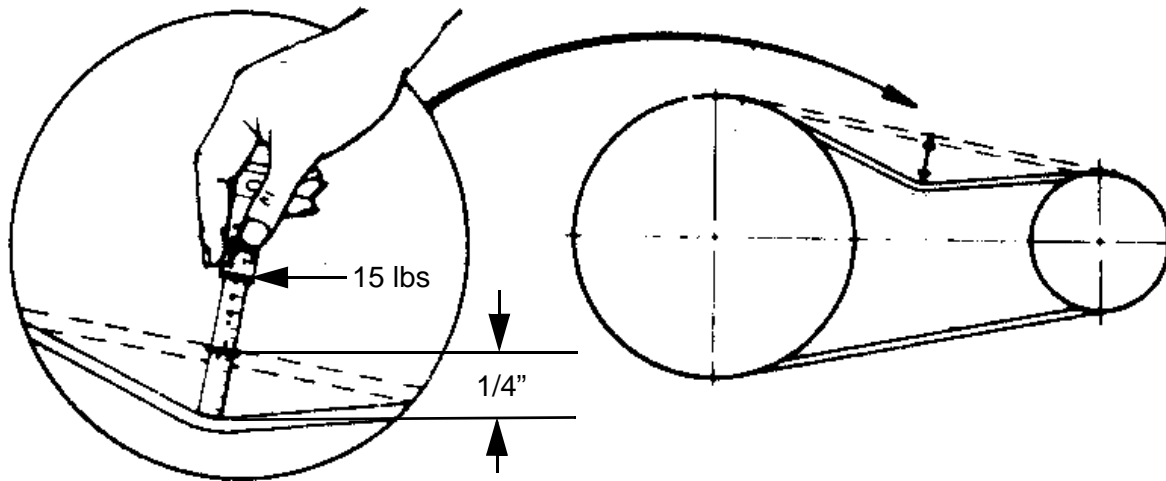
13. Belt tension must now be checked and if necessary corrected. Remember, if it is necessary to change the belt tension, the belt alignment must be maintained.

Diagram 5.3 - Drive Unit



14. Place a belt gauge (Precor part # 20030-117 or equivalent) in the middle of the step up belt and the center of the belt span (see Diagram 5.4). Lay a straight edge along the length of the belt and beside the belt gauge. Slide one of the o-rings up against the shoulder of the belt gauge. Press downward on the belt gauge, causing the belt to deflect. Read the deflection on the belt gauge at the edge of the straight edge. Deflect the belt 1/4". Read the tension across the top edge of the o-ring. If the belt is correctly tensioned the gauge will read between 14 and 16 pounds.
15. If the tension in step 14 is correct skip to step 18. Otherwise continue with the next step.

Diagram 5.4 - Measuring Belt tension



16. If the locking tabs on the right and left tension bolts have not been straightened, use pliers to bend the locking tabs out of the way so that the bolts can be turned.

IF...

The belt tensioning gauge reads less than 14 pounds

The belt tensioning gauge reads more than 16 pounds

THEN...

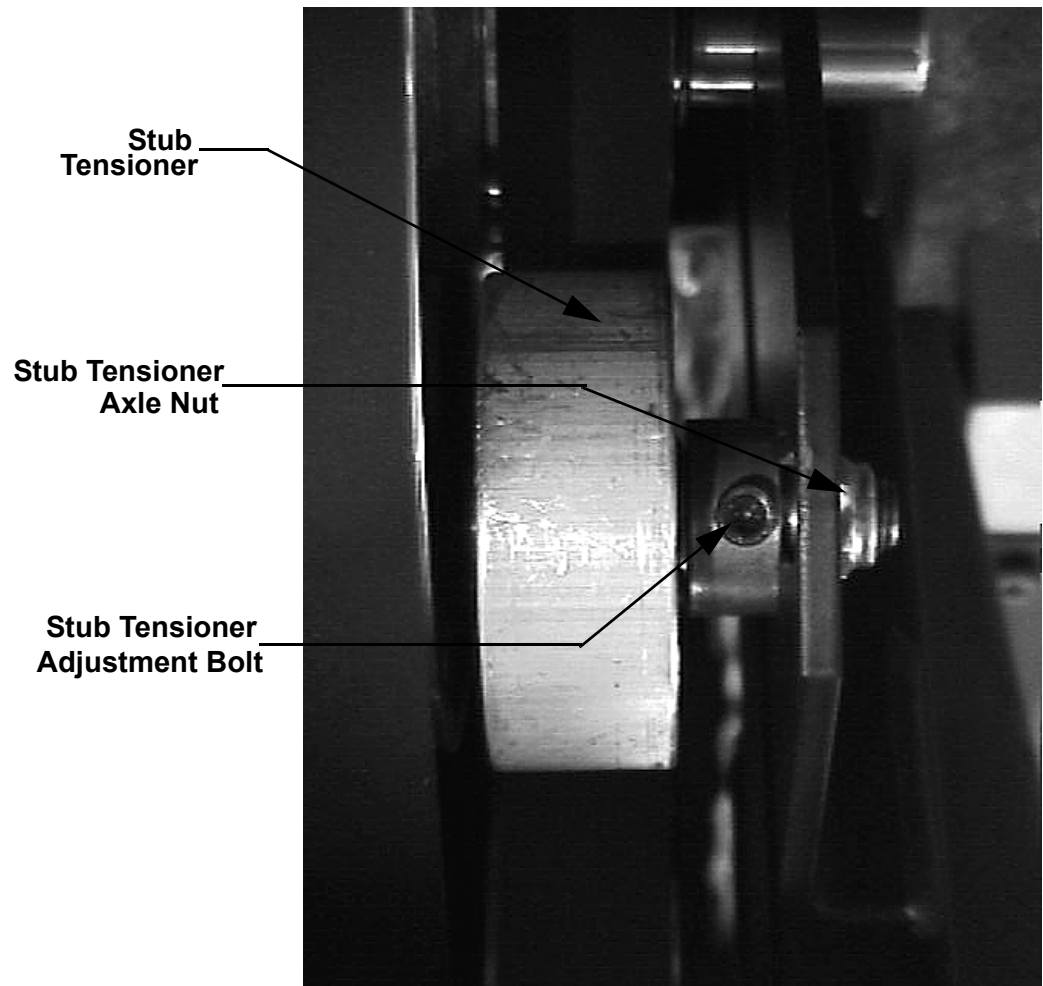
Turn both tension bolts **clockwise**, in equal quarter-turn increments, until the belt tensioning gauge reads 14 - 16 pounds @ 1/4" deflection.

Turn both tension bolts **counterclockwise**, in equal quarter-turn increments, until the belt tensioning gauge reads 14 - 16 pounds @ 1/4" deflection.

17. Verify that the belt alignment is still correct by performing the procedure in step 4.
18. When both the step pulley tension and alignment are correct, use pliers to bend the tension bolt locking tabs into the "locking" position.
19. The input pulley tension must now be checked and corrected, if necessary. There is not sufficient room to use the belt tension gauge to set the input pulley belt tension. It will be necessary to use the correctly tensioned step up belt as a comparison to set the input belt tension.
20. Using your finger, press in on the center of the step up pulley belt to get a feeling of how much pressure it takes to deflect the belt a 1/4".

21. Using your finger, press in on the center of the lower span of the input belt. Compare the pressure required to deflect the input belt to the pressure required to deflect the step up belt.

Diagram 5.5 - Stub Tensioner



22. Loosen the stub tensioner axle nut slightly. Turn the stub tensioner adjustment bolt clockwise to increase or counterclockwise to decrease the input belt tension.
23. When the input belt tension is correct, torque the stub tensioner nut to 200 in/lbs. Replace the stairarms per Procedure 7.22.
24. Check the operation of the unit as described in Section Four, then re-install the rear cover as described in Procedure 7.1

Procedure 6.1 - Troubleshooting the Lower and Upper Interconnect Cables

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

Troubleshooting the Upper Interconnect Cable

1. Set the on/off switch in the "off" position.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Attach the anti-static wrist strap to your arm, then connect the ground lead of the wrist strap to the units frame.
3. Remove the rear cover. For convenience the upper interconnect cable is the cable that attaches to the upper PCA and the lower interconnect cable is the cable that connects to the lower PCA.
4. Remove the fasteners that secure the handlebars to the EFX frame. Carefully remove the handlebar from the EFX frame and disconnect the upper interconnect cable from the upper PCA and the lower interconnect cable. Do not allow the lower inter connect cable to retract into the frame.
5. Connect a known good upper interconnect cable from the lower interconnect cable to the upper PCA. Route the cable outside of the unit at this time.
6. Check operation as described in Section Four.
7. If the unit operated correctly when the new interconnect cable was installed...

THEN...

The original upper interconnect cable is bad; install a new cable as described in Procedure 7.5.

OTHERWISE...

The original upper interconnect cable is not bad; continue with the next step.

8. Reconnect the original upper interconnect cable to the upper PCA.

Troubleshooting the Lower Interconnect Cable

9. Remove the shield from the lower PCA.
10. Remove the interconnect cable from the lower PCA.

11. Connect a known good lower interconnect cable between the lower PCA and the upper interconnect cable.
12. Check operation as described in Section Four.
13. If the unit operated correctly when the spare lower interconnect cable was installed...

THEN...

The original interconnect cable is bad, install a new interconnect cable as described in Procedure 7.5, skip to step 19

OTHERWISE...

The original interconnect cable is good, continue with the next step

14. Reconnect the original lower interconnect cable to the lower PCA.
15. Reconnect the lower interconnect cable to the upper interconnect cable.
16. Replace the lower PCA shield.
17. Replace the rear cover.
18. Replace the interconnect cable cover.
19. Check operation as described in Section Four.

Procedure 6.2 - Troubleshooting the Keypad and Upper PCA

If the function keys on the electronic console are unresponsive, the problem may be either the upper PCA or keypad. This troubleshooting procedure gives you the information you need to determine which of these components is malfunctioning.

Procedure

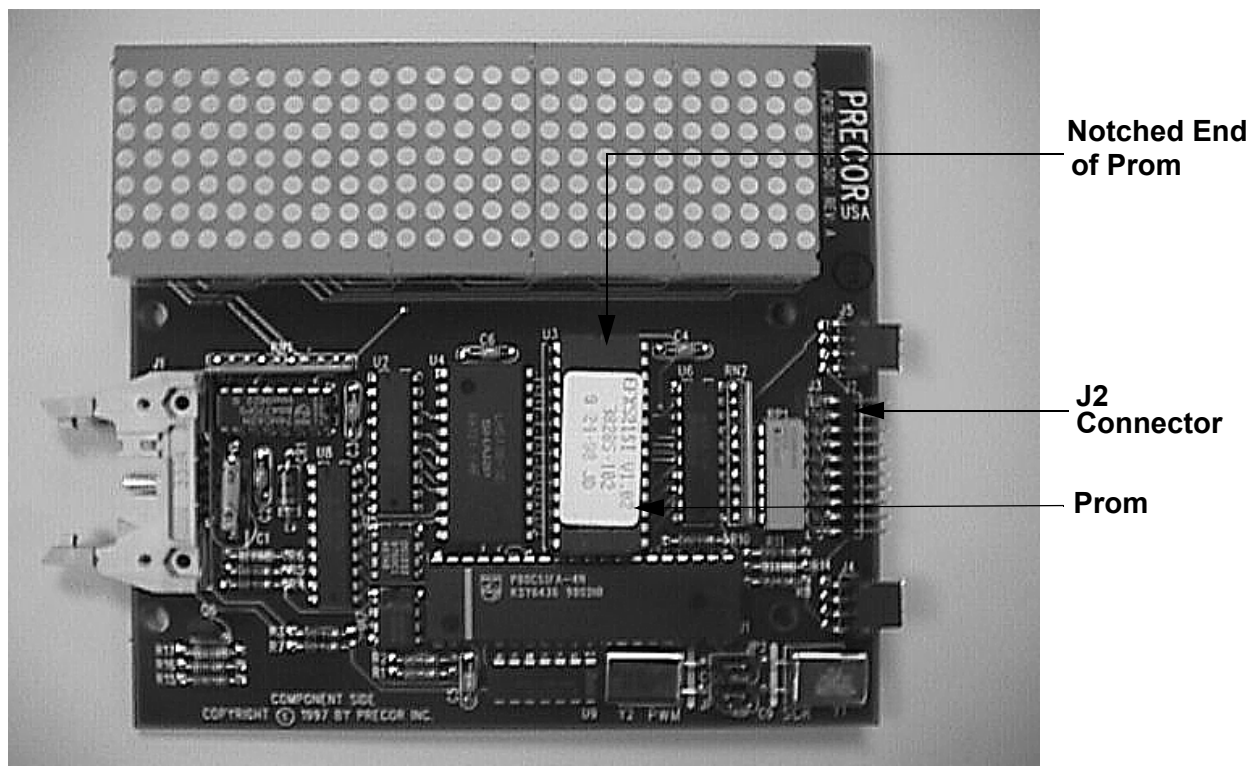
1. Set the circuit breaker in the “off” position.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the screws that secure the upper display assembly to the upper handrail. Carefully, pull some excess interconnect cable out from the display backplate. Rotate the display housing, so that the rear of the upper PCA is facing upward, and set the display housing on the upper handrail.
3. Attach the wrist strap to your arm, then connect the ground lead of the wrist strap to the treadmill frame.

Diagram 6.1 - Upper PCA



4. Set the voltmeter to a range that will conveniently read +6 Vdc.
5. Set the circuit breaker in the “on” position.
6. Use a DVM, set for DC volts with the negative lead of the DVM connected to pin 6 of J2. Read between pin 6 of J2 and the each of the pins in Table 6.1 (no keys pressed) and Table 6.2 (with the appropriate key pressed)

Table 6.1. - Voltage Test Points (Function Keys Not Pressed)

PLACE THE POSITIVE LEAD OF THE VOLTMETER ON...	THE VOLTMETER SHOULD READ...
Pin 3 of J2	5.25 Vdc \pm 50 mVdc
Pin 4 of J2	5.25 Vdc \pm 50 mVdc
Pin 5 of J2	5.25 Vdc \pm 50 mVdc
Pin 7 of J2	5.25 Vdc \pm 50 mVdc
Pin 8 of J2	5.25 Vdc \pm 50 mVdc
Pin 9 of J1	5.25 Vdc \pm 50 mVdc
Pin 10 of J2	5.25 Vdc \pm 50 mVdc

Table 6.2. - Voltage Test Points (Function Keys Pressed)

Place the positive voltmeter lead on...	At the display enclosure, press...	The voltmeter should read between...
Pin 3 of J2	CROSSRAMP ▲	0 Vdc and 500 mVdc
Pin 4 of J2	CROSSRAMP ▼	0 Vdc and 500 mVdc
Pin 5 of J2	ENTER	0 Vdc and 500 mVdc
Pin 7 of J2	PAUSE	0 Vdc and 500 mVdc
Pin 8 of J2	QUICK START	0 Vdc and 500 mVdc
Pin 9 of J2	RESISTANCE ▼	0 Vdc and 500 mVdc
Pin 10 of J2	RESISTANCE ▲	0 Vdc and 500 mVdc

7. If the voltage readings match those listed in Tables 6.1 and 6.2 and one or more keys do not function, replace the upper PCA.
8. If the voltage readings in Table 6.1 are incorrect, disconnect the keypad cable from the keypad connector and repeat the voltage measurements in 6.1. If the voltage readings are now correct, replace the display housing (keypad). If the voltage readings are still incorrect, replace the upper PCA.
9. If the voltage readings in Table 6.1 are correct and one or more voltage readings in Table 6.2 are incorrect, replace the display housing (keypad).
10. Set the circuit breaker in the “off” position.
11. If necessary, carefully re-connect the keypad cable to the keypad connector.
12. Remove the ground lead of the wrist strap from the treadmill frame, then remove the wrist

strap from your arm.

13. Position the display enclosure on the display plate. Install the screws that secure the display enclosure to the display plate.
14. Check the operation of the treadmill as described in Section Three of this appendix.

Procedure 6.3 - Troubleshooting the Speed Sensor

Circuit Description

The speed sensor is a hall effect sensor. A magnet is mounted on the right hand crankarm and passes the hall effect sensor once per revolution. The output from the speed sensor is a 5 Vdc square wave, the frequency of which indicates the operating speed. When a square wave output is not being generated by the speed sensor the system assumes the unit is not in use and removes resistance from the eddy current magnet system.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

Procedure

1. Remove the rear cover. Plug the unit into a wall outlet and set the on/off switch in the “on” position. Set the unit in the manual program and operate the unit. If a stride rate is not displayed, the speed sensor is not operative. We shall use the presence of a stride rate to determine when the speed sensor is functioning normally.
2. A magnet must be installed in the crankarm that passes the speed sensor with it's south pole facing the speed sensor. If the stride rate is not being displayed in step 1, verify that a magnet is installed in the crankarm associated with the speed sensor and that the south pole faces outward. The magnet polarity may be checked with another magnet with known poles or a compass. The north pole of the test magnet or the south facing needle should be attracted to the speed sensor magnet.
3. Using a DC voltmeter, measure the voltage between terminal 1 (red wire) and terminal 5 (black wire) on the speed sensor connector. The measurement should be approximately 5.25 Vdc. If the voltage is correct, skip to step 5. If the voltage is missing or significantly low, disconnect the speed sensor connector from the speed sensor and repeat the measurement on the connector. If the voltage is now correct, replace the speed sensor. If the voltage is still missing or significantly low, continue with step 4.
4. Repeat the measurements in step 3 at terminals 1 and 5 of J8 on the lower PCA. If the voltage is missing or significantly low, replace the lower PCA. If the voltage is now correct, replace the speed sensor assembly.
5. Using a DC voltmeter, measure the voltage between terminal 2 (blue/white wire) and terminal 5 (black wire) on the speed sensor connector. Slowly rotate the crankarm as you monitor the voltage. The measurement should switch between approximately 0.5 Vdc and approximately 4.25 Vdc. If the voltage is correct, skip to step 6. If the voltage does not switch (the voltage is constantly low or high as the flywheel is slowly rotated), replace the speed sensor. If the voltage does not exceed 3.8 Vdc, adjust potentiometer R24, on the lower PCA, clockwise and repeat the measurement. If the voltage is now correct, but the stride rate is still not displayed when the unit is operated, continue with step 6. If the voltage is still significantly low, replace the lower PCA.

6. Repeat the measurement in step 5 at terminals 2 and 5 of J8 on the lower PCA. If the voltage is missing or significantly low, replace the speed sensor assembly.
7. If you have performed all of the above tests and the stride rate is not displayed when the unit is operated, there are three parts that could cause the problem. There are not any good tests to check these parts other than substituting a known good part. They are lower PCA, ribbon cable and upper PCA. Replace only one part at a time. If the new part does not correct the problem, replace the original part.
8. If you have performed all of the above tests and the speed sensor is still not functioning, call Precor Technical Support.

Procedure 6.4 - Troubleshooting the Lift System

Note:

The lift motor is disabled when the EFX is not being used. The speed sensor must detect motion in order for lift operation to be enabled. In the following procedures, when lift motor movement is being tested the stairarms must be in motion. Before performing this procedure, ensure that the speed sensor is operating normally per Procedure 6.3.

1. If the lift motor will not move skip to step 7. If the lift motor moves and an error occurs continue with step 2.
2. Access the diagnostics program per Procedure 2.1 and proceed to the lift calibration portion of the diagnostics program. If the lift calibration number is 0 or 255 skip to step 3. Operate the lift, if the lift calibration number does not increment as the lift moves, skip to step 3. If the calibration number increments as the lift moves, re-calibrate the lift per Procedure 5.2. If re-calibration does not correct the problem, continue with step 3.
3. Set the on/off switch in the "off" position. Remove the lift cable connector (P4) from the lower PCA. Using an ohmmeter, measure between terminal 1 (brown or green wire) and terminal 3 (orange wire) of the P4 connector on the lower PCA. The measurement should be approximately 10 K Ω (or 1K Ω depending on manufacturer). If the measurement is open (∞) or significantly high or low, replace the lift motor.
4. Using an ohmmeter, measure between terminals 1 and 2 of P4 and measure between 2 and 3 of P4 on the lower PCA. The two measurements should total approximately 10 K Ω (or 1K Ω depending on manufacturer). If the measurement is open (∞) or significantly high or low, replace the lift motor.
5. If you have performed all of the above tests and an error still occurs when the lift motor operates, there are three parts that could cause the problem. There are not any good tests to check these parts other than substituting a known good part. They are lower PCA, ribbon cable and upper PCA. Replace only one part at a time. If the new part does not correct the problem, replace the original part.
6. If you have performed all of the above tests and the lift system is still not functioning, call Precor Technical Support.
7. Set the circuit breaker in the "off" position. Remove the F2 (2 amp slow blow) fuse from the lower PCA. Measure the fuse with an ohmmeter. The measurement should be 1 Ω or less. If the fuse is good, re-insert the fuse and skip to step 9. If the fuse is open (∞) or significantly high, replace the fuse. Before operating the lift motor it is necessary to perform a continuity test on the lift motor.
8. Remove the P3 connector from the lower board. Using an ohmmeter, measure between terminals 1 and 3 of P3, between terminals 1 and 2 of P3 and between terminals 2 and 3 of P3. The measurements should be approximately 49 Ω , 47.5 Ω and 96.5 Ω , respectively. If any of the measurements are significantly low, replace the lift motor. If any of the readings are

open (∞) or significantly high, check the lift motor cable and connectors. Repair any wires or connections that are bad. If the cable and connectors are good, replace the lift motor.

9. Re-insert the P4 connector in the lower PCA. Set the on/off switch in the "on" position. Using an AC voltmeter, monitor the voltage between terminals 1 and 2 (red and white wires) of the P4 connector. Enter the manual program and press the **CROSSRAMP ▲** key. The measurement should be approximately 120 Vac (line voltage). If the voltage is present and the lift motor moves normally, skip to step 10. The voltage will only be present until such time as an error occurs. If line voltage is not present skip to step 11. If line voltage is measured but the motor does not move, replace the lift motor.
10. Monitor terminals 1 and 3 (white and black wires) of P4. Enter the manual program and press the **CROSSRAMP ▼** key. The measurement should be approximately 120 Vac (line voltage). If the voltage is present and the lift motor moves normally skip to step 12. The voltage will only be present until such time as an error occurs. If line voltage is measured but the motor does not move, replace the lift motor.
11. If line voltage is not present in both steps 9 and 10, connect a dc voltmeter between TP3 and TP6 on the Lower PCA (See Diagram 7.4). The DC voltmeter should read approximately 5.5 Vdc. Walk on the unit and press the **CROSSRAMP ▼** key. The DC voltmeter should read near 0 Vdc and the ramp should go downward. Connect a dc voltmeter between TP4 and TP6 on the Lower PCA (See Diagram 7.4). The DC voltmeter should read approximately 5.5 Vdc. Pedal on the unit and press the **CROSSRAMP ▲** key. The DC voltmeter should read near 0 Vdc and the ramp should go upward.
12. If all of the voltages in step 11 were correct but the ramp did not move in both directions replace the LPCA.
13. If one or more of the voltages in step 11 were incorrect the problem is either one of the interconnect cables or the Upper PCA. If the display does not indicate that the ramp is moving in both directions when the appropriate **CROSSRAMP** key is pressed the problem is either the Upper PCA or the keypad (display housing). Use Procedures 6.1 & 6.2 to determine if the problem is an interconnect cable, keypad or Upper PCA.
14. If you have performed all of the above tests and the lift system is still not functioning, call Precor Technical Support.

Procedure 6.5 - Troubleshooting the Eddy Current System

Note:

If the control circuit does not see an output from the speed sensor, it removes power from the eddy current system. Therefore, when it is necessary to check the resistance or take voltage measurements in the eddy current system it will be necessary to slowly turn the flywheels to ensure that the power time out has not occurred.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know

1. There are three typical symptoms concerning the eddy current system. No resistance (pedaling resistance), no resistance shortly after power up and incorrect resistance. If the problem is no resistance, continue with step 2. If the problem is no resistance shortly after power up, test the speed sensor per Procedure 6.3. If the problem is incorrect resistance, skip to step 7.
2. Set the on/off switch in the “on” position, enter the manual program and set the resistance at level 10. Using a DC voltmeter, check the voltage across the magnet. The voltage should measure approximately 40 Vdc. If the voltage is missing or significantly low, skip to step 4. If the voltage is correct, continue with step 3.
3. Set the on/off switch in the “off” position. Check the magnet wiring per Diagram 8.1. If any of the magnet wiring is reversed or incorrect the resistance will be affected. If you have performed all of the above tests and there is still no resistance, call Precor Technical Support.
4. Set the on/off switch in the “off” position. Using an ohmmeter, measure between the M- and M+ terminals of the lower PCA. The measurement should be approximately 90 Ω to 110 Ω . If the measurement is open (∞), check the connections at both magnets and the lower PCA.
5. If all of the wiring connections are good and there is still no resistance, there are three parts that could cause the problem. There are not any good tests to check these parts other than substituting a known good part. They are lower PCA, ribbon cable and upper PCA. Replace only one part at a time. If the new part does not correct the problem replace the original part.
6. If you have performed all of the above tests and there is still no resistance, call Precor Technical Support.
7. If the resistance is greater than normal, the cause could be mechanical rather than electrical. Check all moving parts in the drive section and stairarms for worn parts that could be “binding”. Replace the appropriate parts.
8. Set the on/off switch in the “on” position, enter the manual program and set the resistance at level 10. Using a DC voltmeter, check the voltage across the magnet. The voltage should measure approximately 40 Vdc.

9. If the voltage is still significantly high or low, there are three parts that could cause the problem. There are not any good tests to check these parts other than substituting a known good part. They are lower PCA, ribbon cable and upper PCA. Replace only one part at a time. If the new part does not correct the problem, replace the original part.
10. If you have performed all of the above tests and the resistances are still incorrect, call Precor Technical Support.

Procedure 6.6 - Upper Display does not Illuminate

1. Set the on/off switch in the “off” position, unplug the line cord from the wall outlet.
2. Remove the F1 and F2 fuses from the lower PCA. (See Diagram 7.2)
3. Remove the fuses from the input power module. (See Diagram 7.3)
4. Check all four fuses with an ohmmeter. They should read approximately 1Ω or less. Replace any fuse that reads significantly high.
5. Replace the fuses in the power input module.
6. With the line cord still unplugged from the wall outlet, set the on/off switch in the “on” position. Check between the power terminals of the line cord with an ohmmeter. The ohmmeter reading should be very high, megohms or greater.
7. If the reading is good skip to step 11, otherwise continue with the next step.
8. If the reading in step 5 is significantly low, check the wiring between the lower PCA and the on/off switch, between the on/off switch and the input module. Replace any cut or nicked wiring.
9. Check the line cord for nicked or cut wiring. Replace the line cord if necessary.
10. If you have performed all of the above tests and are unable to resolve the problem, contact Precor customer support.
11. Replace the F1 (1/4 amp) fuse in the lower PCA, perform the resistance measurement in step 6. The reading should be approximately 40Ω .
12. Replace the F2 (2 amp) fuse in the lower PCA, perform the resistance measurement in step 6. The reading should be approximately 40Ω .
13. If either of the readings in step 11 or 12 were significantly low, replace the lower PCA.
14. Plug the line cord into the wall outlet and set the on/off switch in the “on” position.
15. The green LED (D1) and the red LED (D2) should illuminate. Check between TP5 and TP6 on the lower PCA with a DC voltmeter. The reading should be approximately 5.5 Vdc. (See Diagram 7.4)
16. If the reading in step 15 is good, skip to step 18. If the reading in step 15 is significantly low, set the on/off switch in the “off” position. Disconnect the lift cables (J3 & J4) and the interconnect cable (J5) from the lower PCA.

17. Set the on/off switch in the "on" position. Repeat step 15. If the reading is still significantly low, replace the lower PCA. If the reading is now good, the problem is either the interconnect cable or the upper PCA.
18. Substitute a known good upper PCA. If the upper PCA does not correct the problem, troubleshoot the upper and lower interconnect cables per Procedure 7.1
19. If you have performed all of the above tests and are unable to resolve the problem, contact Precor customer support.

Procedure 7.1 - Replacing the Front or Rear Covers

Procedure

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

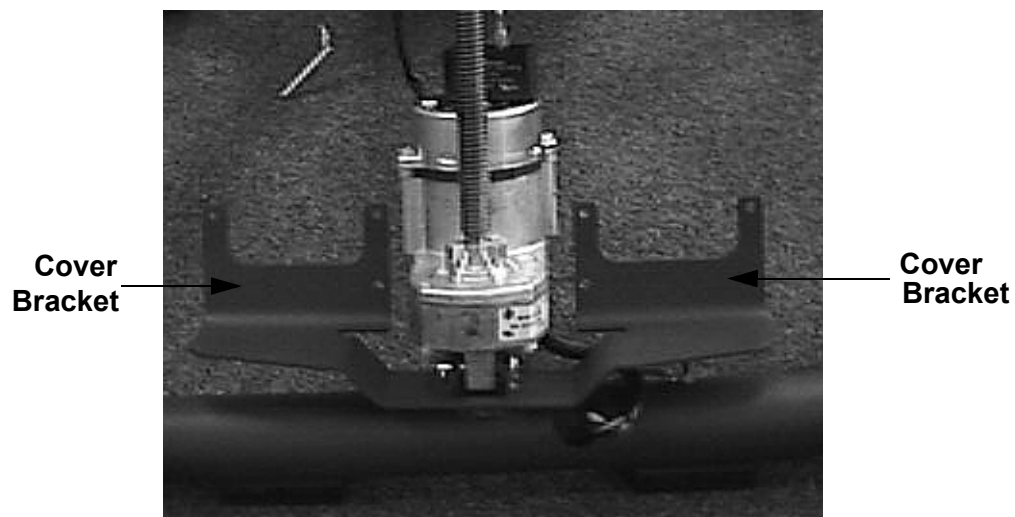
Removing and Replacing the Rear Cover

2. Remove the 6 screws that secure the rear cover.
3. Lift and slightly spread the rear cover until it clears the unit, then set it aside.
4. When maintenance operations are complete, position the rear cover at its mounting position.
5. Gently spread the cover until it fits over the cover brackets. Replace the 6 screws that secure the rear cover.

Removing and Replacing the Front Cover

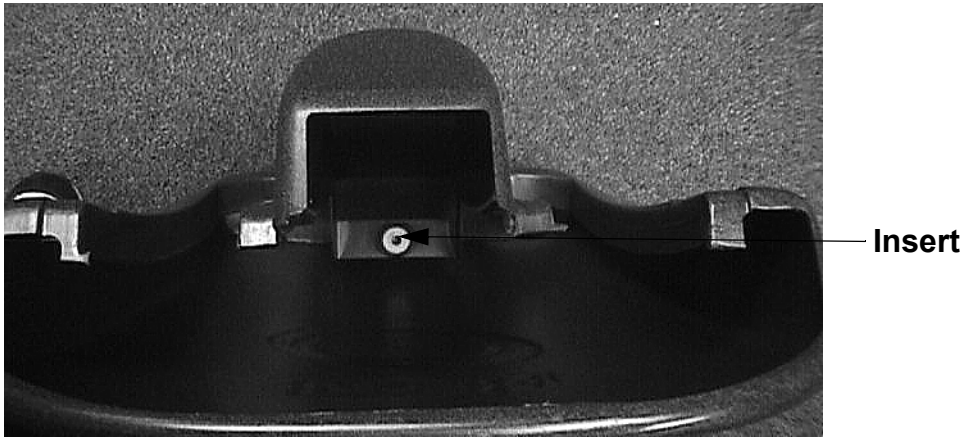
6. If the ramp is not at level 14, plug the power cord into an AC outlet and set the on/off switch in the “on” position. Enter the manual program, walk on the unit and operate the ramp to level 14. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet. Remove the 8 screws that secure the lower rear of the front cover to the cover bracket (See Diagram 7.1). **Do not remove the 4 screws in the upper rear of the cover.**

Diagram 7.1 - Cover Bracket



7. The lower portion of the cover fits very snugly on the lift motor. Gently spread the cover and lift it over the lift motor and then remove the cover from the EFX.
8. When maintenance operations are complete, slide the cover into place. Be sure the left and right side of the cover bracket is outside of the cover. Be sure that the insert, located in the upper inside portion of the cover, slides onto the end of the lift motor drive screw (See Diagram 7.2).

Diagram 7.2 - Cover, Bottom View



9. Replace and hand tighten the 8 screws that retain the lower rear of the cover to the cover bracket.
10. Tighten the screws replaced in step 9.

Procedure 7.2 - Replacing the Display Enclosure or Upper PCA

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

Removing the Display Enclosure

1. Set the on/off switch in the "off" position.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the screws that secure the display housing to the display backing plate.
3. Attach the wrist strap to your arm, then connect the ground lead of the wrist strap to the EFX frame.
4. Disconnect the interconnect cable from the upper PCA.
5. If you are going to re-install the display enclosure without replacing the upper PCA...

THEN...

Skip to Step 11.

OTHERWISE...

Continue with the next step.

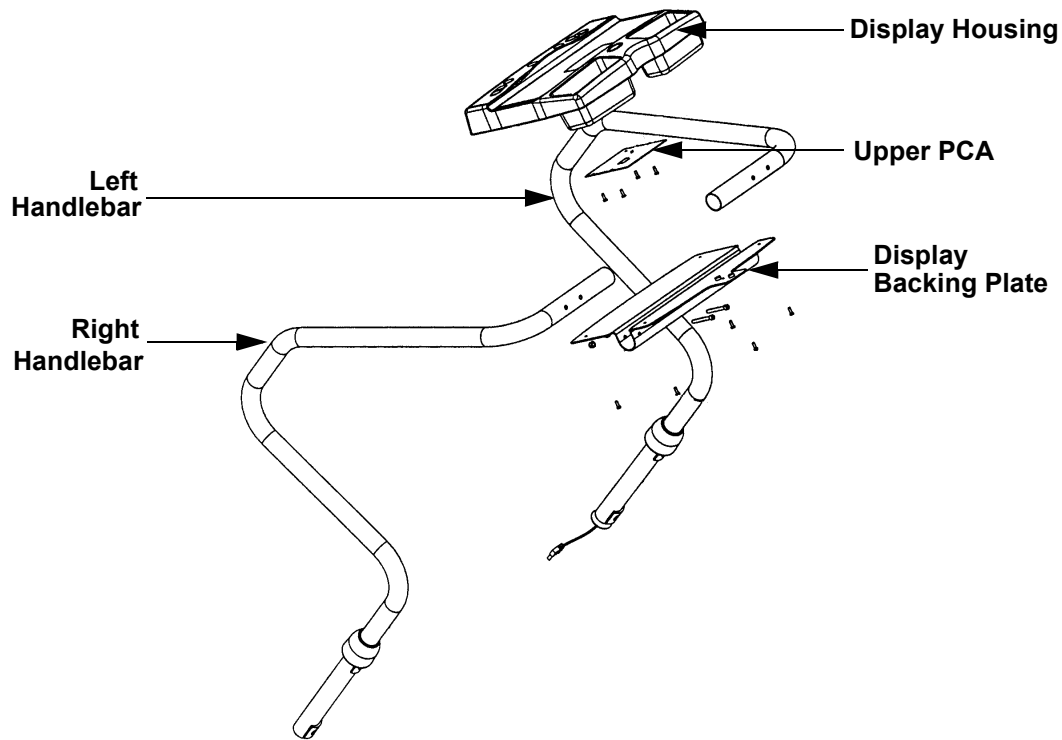
Removing and Replacing the Upper PCA

6. Carefully disconnect the keypad cable from the upper PCA.
7. Remove the screws that secure the upper PCA to the display enclosure.
8. Note the orientation of the Prom in the upper PCA. Using a chip puller, remove the Prom from the defective upper PCA (see Diagram 6.1).

Note:

When you package the upper PCA, document the problem as described in Procedure 3.6, Documenting Software Problems.

9. Orient the Prom as in step 10 and carefully insert the Prom in the chip socket on the new upper PCA. Take care not to bend the legs of the PROM.

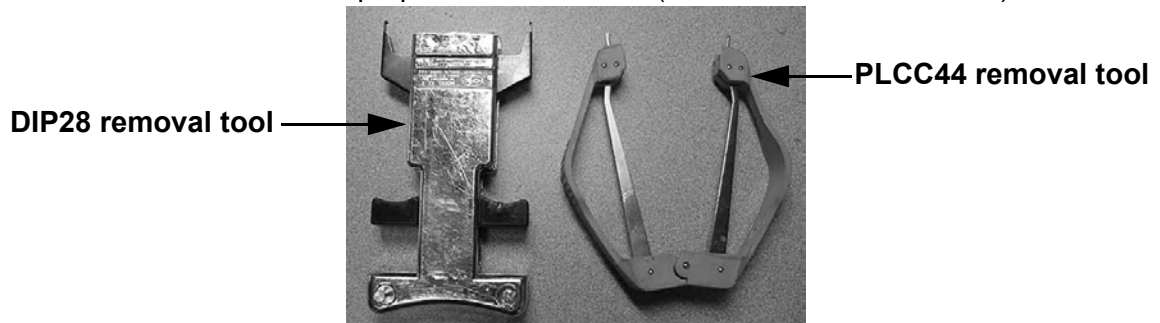
Diagram 7.3 - Upper Handlebar Assembly

10. Reposition the upper PCA at its mounting location on the display enclosure (refer to Diagram 7.3). Replace and tighten the upper PCA mounting screws.
11. Reconnect the keypad cable to the upper PCA.
12. Reconnect the interconnect cable to the upper PCA.
13. Remove the ground lead of the wrist strap from the EFX frame, then remove the wrist strap from your arm.
14. Position the display enclosure on the display backing plate. Replace and tighten the display mounting screws.
15. Check operation as described in Section Four.

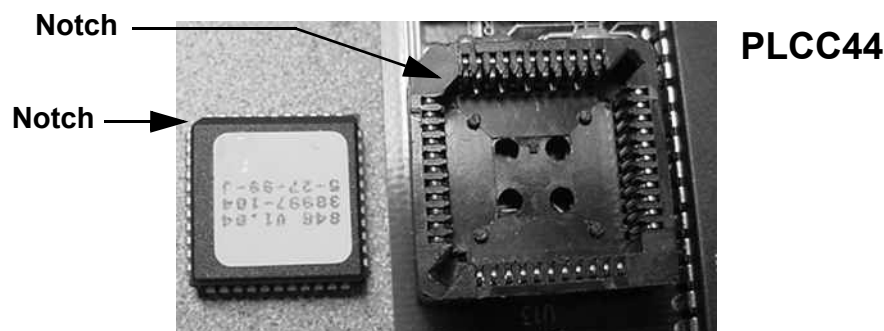
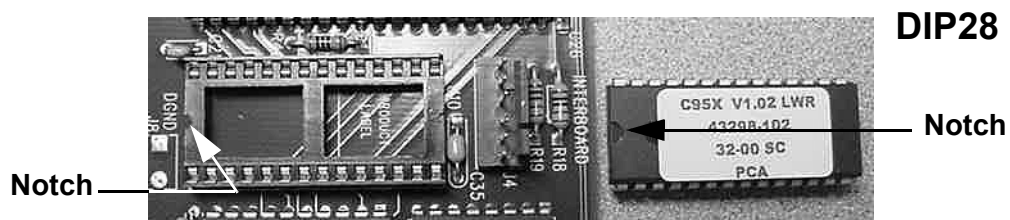
Procedure 7.3 - Replacing the PROM

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 IC's 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.



Procedure 7.4 - Replacing the Lower PCA

Removing the Lower PCA

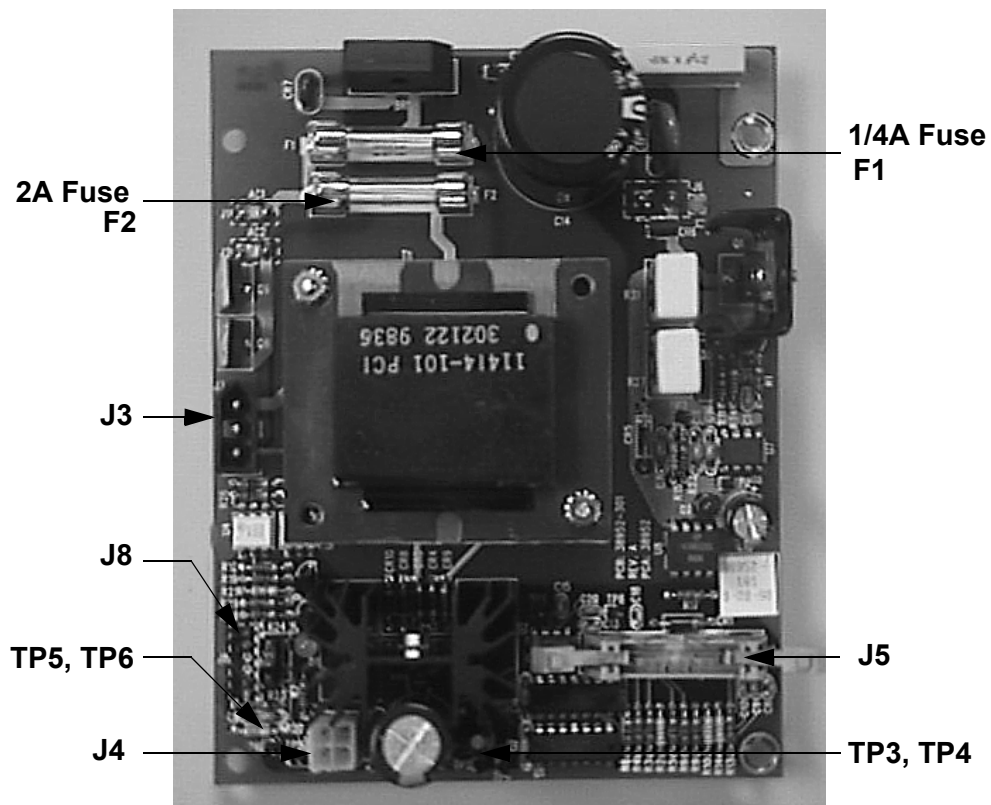
1. Set the on/off switch in the "off" position.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Attach the wrist strap to your arm, then connect the ground lead of the wrist strap to the EFX frame.
4. Remove the shield from the lower PCA.
5. Disconnect the cables from the lower PCA.
6. Remove the screws that secure the lower PCA.

Diagram 7.4 - Lower PCA



Replacing the Lower PCA

7. Position the replacement lower PCA at its mounting position.
8. Install the screws that secure the lower PCA.
9. Connect the cables you disconnected in Step 5.
10. Install the lower PCA shield.
11. Remove the ground lead of the wrist strap from the EFX frame, then remove the wrist strap from your arm.
12. Re-install the rear cover as described in Procedure 7.1, then check the operation of the EFX 546 as described in Section Four.

Procedure 7.5 - Replacing the Lower and/or Upper Interconnect Cables

Before you install a new interconnect cable, ensure that the interconnect cable is defective as described in Procedure 6.1.

Procedure

1. Turn off the EFX with the ON/OFF switch, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Attach the wrist strap to your arm, then connect the ground lead of the wrist strap to the EFX frame.

CAUTION

When you perform the next step, do not allow the lower interconnect cable to retract into the frame tube.

3. Remove the hardware that secures the handlebars to the frame tubes. Carefully remove the handlebars from the frame tubes, then disconnect the upper interconnect cable from the lower interconnect cable.
4. Choose one:

IF...

You are replacing the upper interconnect cable

THEN...

Continue with the next step.

You are replacing the lower interconnect cable

Skip to Step 12.

Replacing the Upper Interconnect Cable

5. Remove the screws that secure the display enclosure to the display plate.
6. Disconnect the interconnect cable from the upper PCA.
7. Tape the lower end of the new upper interconnect cable to the upper end of the original upper interconnect cable.

8. Pull the original upper interconnect cable from the bottom of the frame tube. When the connector of the new cable clears the tube, disconnect and discard the original interconnect cable.
9. Connect the new upper interconnect cable to the upper PCA.
10. Position the display enclosure on the display plate. Using a torque wrench, torque the screws that secure the display enclosure to the display plate to 7 - 10 inch-pounds.
11. If you are installing a new lower interconnect cable...

THEN...

Continue with the next step.

OTHERWISE...

Skip to Step 18.

12. Remove the rear cover as described in Procedure 7.1.
13. Disconnect the lower interconnect cable from the lower PCA.
14. Tape the upper end of the new lower interconnect cable to the lower end of the original lower interconnect cable.

Note:

If necessary, remove the foot pad to facilitate performing the next step.

15. Pull the original lower interconnect cable through the frame tube. When the connector of the new cable clears the tube, disconnect and discard the original interconnect cable.
16. Connect the new lower interconnect cable to the lower PCA.
17. Replace the rear cover as described in Procedure 7.1.
18. Connect the upper and lower interconnect cables to each other.
19. Carefully slide the handlebars into the frame tubes. Secure the handlebars using the hardware removed in Step 3. Slide the boots over the junction of the handlebars and frame tubes.
20. Remove the ground lead of the wrist strap from the EFX frame, then remove the wrist strap from your arm.
21. Check the operation of the EFX as described in Section Four.

Procedure 7.6 - Replacing the Power Entry Module

Removing the Power Entry Module

1. Set the on/off switch in the off position, then unplug the power cord from the wall outlet and from the EFX.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Release the fuse drawer from the power entry module. Remove the fuse drawer.
(See Diagram 7.5)

Diagram 7.5 - Fuse Drawer, Power Entry Module



3. Remove the fuses from the fuse drawer and test them with an ohmmeter. Both fuses should read approximately 1Ω or less. If both fuses test good, continue with step 4. If either fuse reads significantly high, replace the fuse and retest the EFX. It may not be necessary to replace the power entry module. If the fuse blows again as soon as power is applied, troubleshoot the EFX per Procedure 6.6.
4. Remove the wires from the power entry module, a brown and blue wire, a brown and blue jumper. Remove the ground wire from the ground stud.
5. Note the orientation of the power entry module. The new module must be positioned with the same orientation. Remove the screws that secure the power entry module to the rear assembly bracket.

Replacing the Power Entry Module

6. Position the new power entry module at its entry position. Make sure that the module is oriented correctly. Install the screws that secure the power entry module to the EFX frame.
7. Refer to Wiring Diagram 8.1 and reconnect the wires removed in step 4. Replace the ground wire on the ground stud.
8. Remove the fuses from the fuse drawer of the defective input power module. Check the fuses as in step 3 and insert the fuses into the replacement fuse drawer. Insert the fuse drawer into the input power module.
9. Check the operation of the EFX as described in Section Four.

Procedure 7.7 - Replacing the Line Filter

Removing the Line Filter

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Choose One:

IF...

You are removing a line filter on a 120-volt unit

THEN...

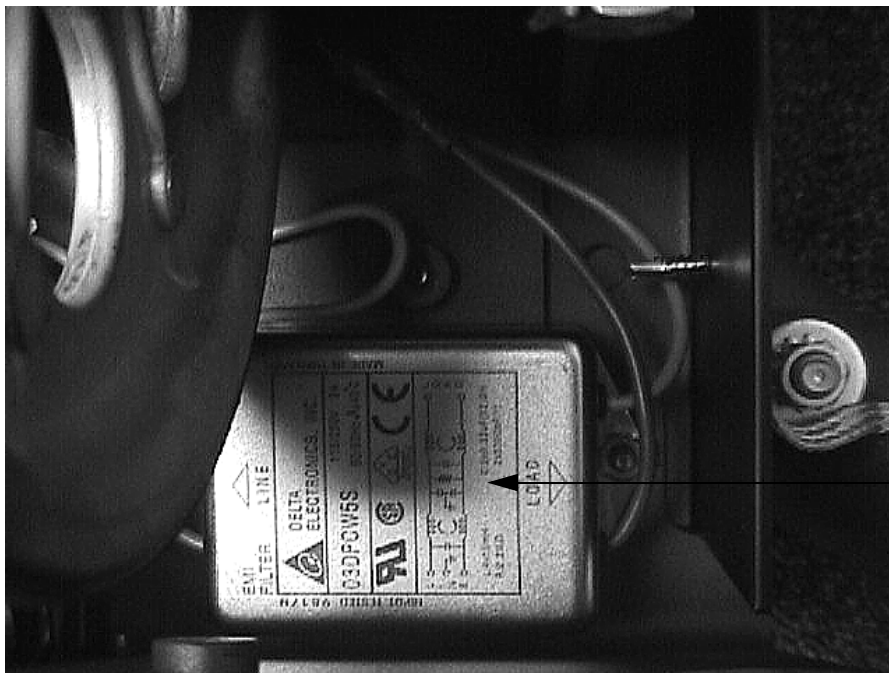
Disconnect the line filter assembly from the on/off switch and J1 and J2 connectors on the lower PCA.

You are removing a line filter on a 240-volt unit

Disconnect the line filter assembly from the on/off switch and step-down transformer.

4. Remove the screws that secure the line filter. Remove the filter from its mounting position.

Diagram 7.6 - AC Line Filter



AC Line Filter

Replacing the Line Filter

5. Position the new line filter on the rear assembly bracket. Install the screws that mount the line filter to the rear assembly bracket.
6. Refer to Wiring Diagram 8.1 for 120V units or Wiring Diagram 8.3 for 240V units and reconnect the wiring removed in step 3.
7. Re-install the rear cover as described in Procedure 7.1, then check the operation of the EFX as described in Section Four.

Procedure 7.8 - Replacing the ON/OFF Switch

Removing the ON/OFF Switch

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Disconnect the wiring from the on/off switch (See Diagram 7.5).
4. Depress the mounting tabs that secure the switch to its mounting bracket. Remove the switch from its mounting position.

Replacing the ON/OFF Switch

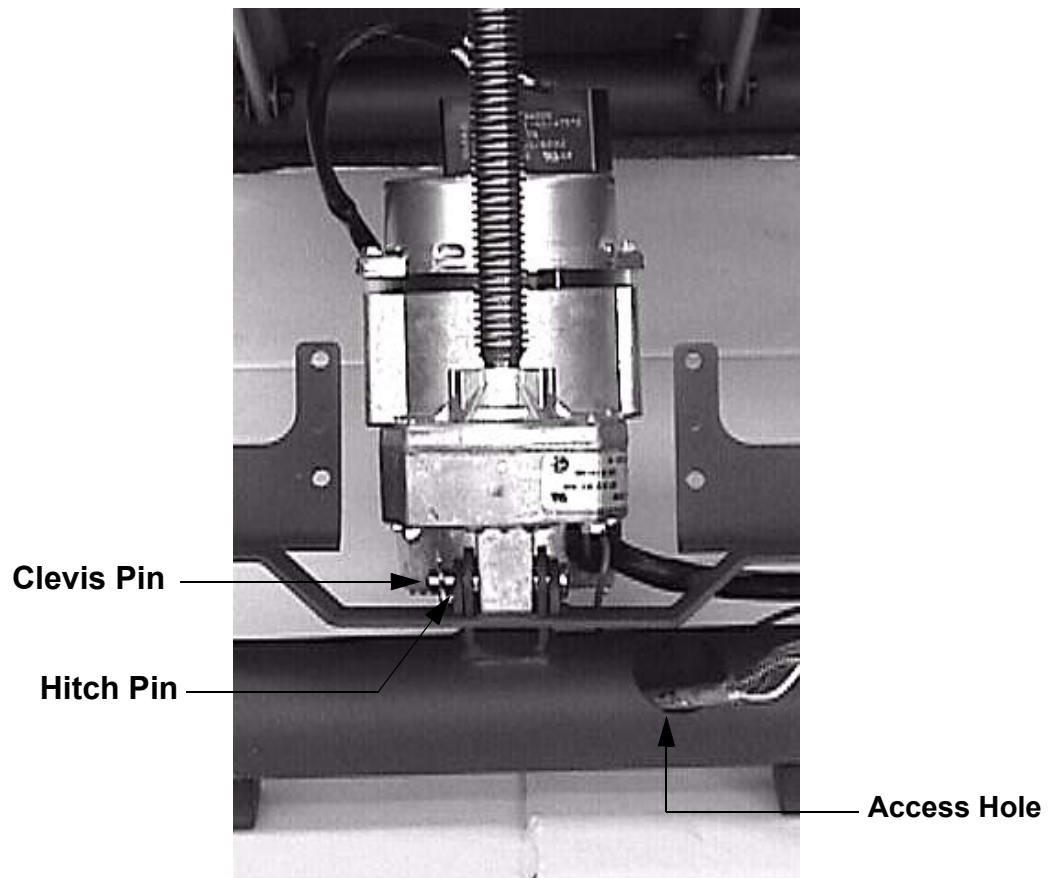
5. Make sure that the new on/off switch is set to the “off” position. Position the switch assembly so that the label is facing up. Snap the switch assembly into the mounting bracket.
6. Refer to Wiring Diagram 8.1 for 120V units or Wiring Diagram 8.3 for 240V units and reconnect the switch wiring removed in step 3.
7. Re-install the rear cover as described in Procedure 7.1, then check the operation of the EFX as described in Section Four.

Procedure 7.9 - Replacing the Lift Motor

Removing the Lift Motor

1. Set the on/off switch in the "off" position. Remove the front cover as described in Procedure 7.1.
2. Remove the retaining clip from each lift nut mounting pin. Support the lift ramp assembly and remove the lift mounting pins from the lift nut. Raise the ramp until the ramp end bracket clears the lift nut and rotate the lift motor forward. Lower the lift ramp assembly until it is resting on the frame. (See Diagram 5.1)
3. Pull the lift motor cable out of the access hole and disconnect the lift motor cables. (See Diagram 7.7). Disconnect the lift motor green wire from the EFX frame.
4. Remove the hitch pin from the clevis pin. Remove the clevis pin from the lift motor.

Diagram 7.7 - Lift Motor Mounting



5. Remove the lift motor from the EFX.

Replacing the Lift Motor

6. Mount the replacement lift motor with the clevis and hitch pins. Reconnect the lift motor cable and carefully push the excess cable into the access hole. Reconnect the lift motor green wire to the EFX frame.
7. Set the on/off switch in the “on” position. Enter the diagnostics routine per Procedure 2.1. After the L.E.D. test is complete, the lift calibration number will be displayed. Operate the **CROSSRAMP ▲** or **CROSSRAMP ▼** keys as required to set the lift calibration number to 200.

Caution

Do not allow the lift motor drive screw to rotate while setting the distance in step 8.

8. Rotate the lift nut on the lift motor drive screw until three threads are exposed above the lift nut. If the lift motor drive screw rotates the lift calibration number will no longer be 200. The lift calibration number must be 200 and the distance measurement must be correct for the lift calibration to be correct.
9. Set the on/off switch in the “off” position.
10. Raise the lift ramp assembly to a convenient height and lower the ramp end cap over the lift nut and insert the lift pins into the lift nut. Do not rotate the lift nut any more than is necessary to align the holes in the lift nut with the holes in the ramp end cap. Replace both retaining clips on the lift mounting pins.
11. Set the on/off switch in the “on” position. Thoroughly test all lift related functions per Section Four.
12. Set the on/off switch in the “off” position, replace the front cover per Procedure 7.1.

Procedure 7.10 - Replacing a Crankarm Assembly

Removing a Crankarm Assembly

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

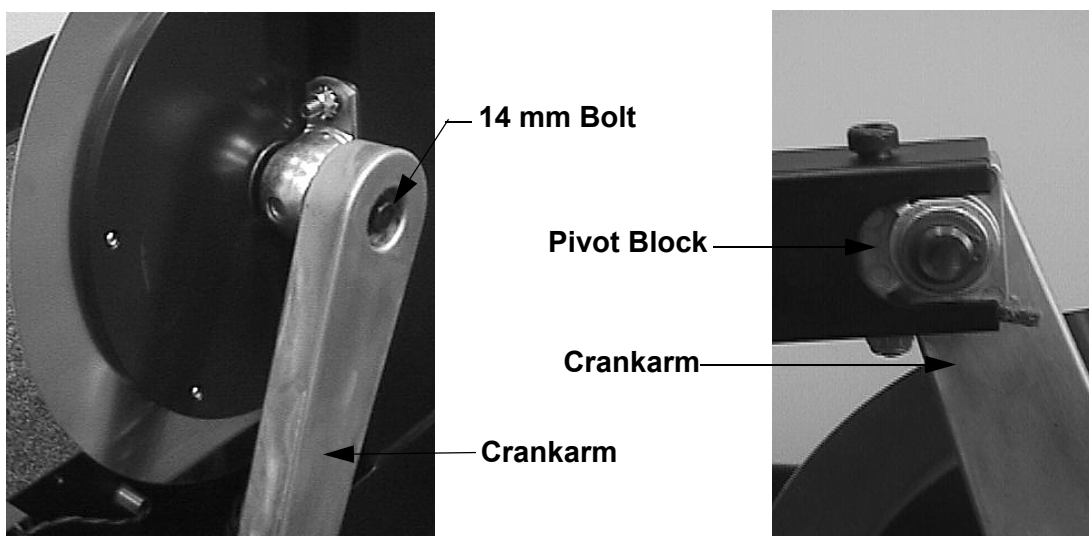
2. Remove the rear cover as described in Procedure 7.1.
3. Remove the stairarm assembly as described in Procedure 7.22.

Note:

Notice the position of the two crank arms. When the crankarms are replaced, they must be positioned so that they are 180 degrees opposing.

4. Remove the 14 mm. bolt that secures the crankarm to the input pulley shaft. It will be necessary, use a Pitman arm puller or 4” to 6” gear puller to remove the crankarm. Do not use a hammer or mallet to remove the crankarm.
5. If you are removing both crank arm assemblies, repeat Steps 3 and 4 for the second crankarm assembly.

Diagram 7.8 - Crankarm



6. The crankarm removed from the right hand side has a magnet in a recess on the lower backside of the crankarm. The magnet is held in the crankarm by its magnetism. Remove the magnet either by prying it out with a thin bladed screwdriver or by placing a heavy piece of steel near the magnet and allowing it to adhere to the heavy piece of steel.

Replacing a Crank Arm Assembly

7. Place the magnet removed in step 6 in the crankarm that will be mounted on the right hand side of the EFX.
8. Clean the crankarm mounting bolt threads and the input pulley shaft threads with an alcohol swab. Allow them to dry and apply blue loctite to the crankarm mounting bolt threads.
9. Position the crankarm on the input pulley shaft. Thread and hand tighten the 14 mm. bolt into the input pulley shaft. Torque the nut to 300 in/lbs.
10. Replace the stairarm assembly as described in Procedure 7.22.
11. If you are replacing both crankarm assemblies, repeat steps 8 and 9 for the second crankarm assembly.
12. Set the on/off switch in the "on" position. Use the unit and note whether the stride rate is being displayed. If the stride rate is zero while the unit is being used, the magnet was installed backwards. The hall effect sensor is polarity sensitive, therefore the magnet installed in step 7 must be reversed.
13. If the stride rate in step 11 was zero, remove the magnet from the right hand crankarm, reverse and reinstall it. Repeat step 11.
14. Set the unit at its highest resistance setting and use the EFX for a minimum of 3 minutes. Stride in a forward direction for half of the time and in a backward direction for half of the time. Set the on/off switch in the "off" position and re-torque both of the 14 mm. crankarm mounting bolts to 300in/lbs
15. Replace the rear cover per Procedure 7.1.

Procedure 7.11 - Replacing a Pillow Block Bearing

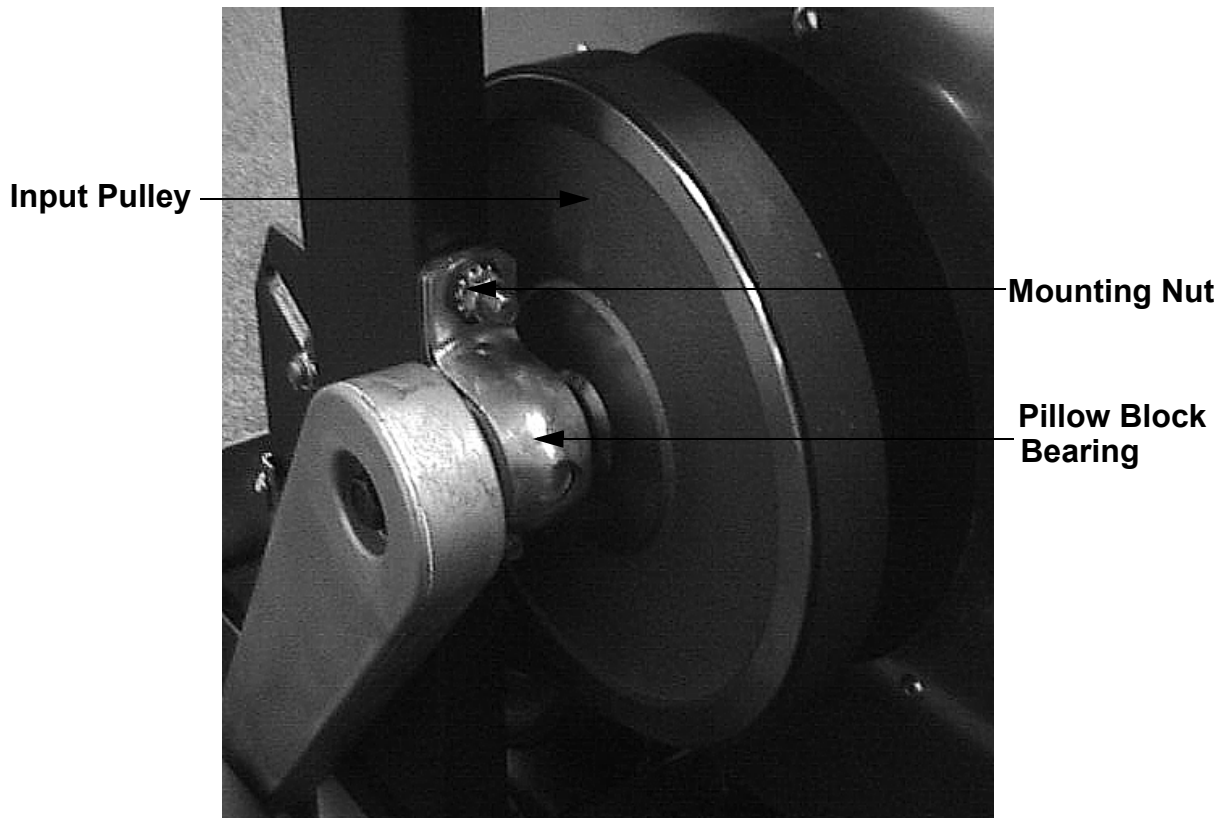
1. Set the on/off switch in the off position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know

2. Remove the rear cover as described in Procedure 7.1.
3. Remove both stairarm assemblies per Procedure 7.22.
4. Remove the crankarm from the same side as the pillow block bearing that you are replacing or both crankarms if you are replacing both pillow block bearings. See Procedure 7.10. Remember, only the right hand crankarm has a magnet installed. If both crankarms have been removed, the crankarm with the magnet must be reinstalled on the right hand side.
5. Before removing tension from the step up and input belts, test the current belt tension by pressing inward on the belts with your finger. You will need to approximate this tension setting later in this procedure.
6. Remove tension from the input pulley and step-up pulley belts as described below:
 - a. Loosen the stub tensioner axle nut and turn the stub tensioner adjustment bolt counterclockwise until tension is removed from the input belt. (See Diagram 5.5)
 - b. Straighten the locking tabs and turn the left and right tension bolts counterclockwise until tension is removed from the step up belt. (See Diagram 5.3)
 - c. Slide the input and step up belts off of their pulleys.
7. Remove the nuts that secure both pillow block bearings to the mounting studs on the drive weldment uprights. (See diagram 7.9)
8. Lift the pillow block assembly(s) off of the mounting studs and slide the pillow block assembly(s) off of the input pulley shaft.
9. Slide the replacement bearings onto the input pulley shaft and onto the mounting studs.

Diagram 7.9 - Pillow Block Bearings



10. Thread and hand tighten the pillow block mounting nuts onto the mounting studs. Torque the pillow block mounting nuts to 200 in/lbs.
11. Tighten the right and left hand tension bolts and the stub tensioner adjustment bolt until the belt tension feels similar to when it was checked in step 5.
12. Align and tension the step up and input belts per Procedure 5.3, steps 4 to 22.
13. Replace the crankarm(s) per Procedure 7.10. If both crankarms have been removed, the crankarm with the magnet must be reinstalled on the right hand side.
14. Replace the stairarms per Procedure 7.22.
15. Replace the rear cover per Procedure 7.1.

Procedure 7.12 - Replacing the Eddy Current Disk Assembly

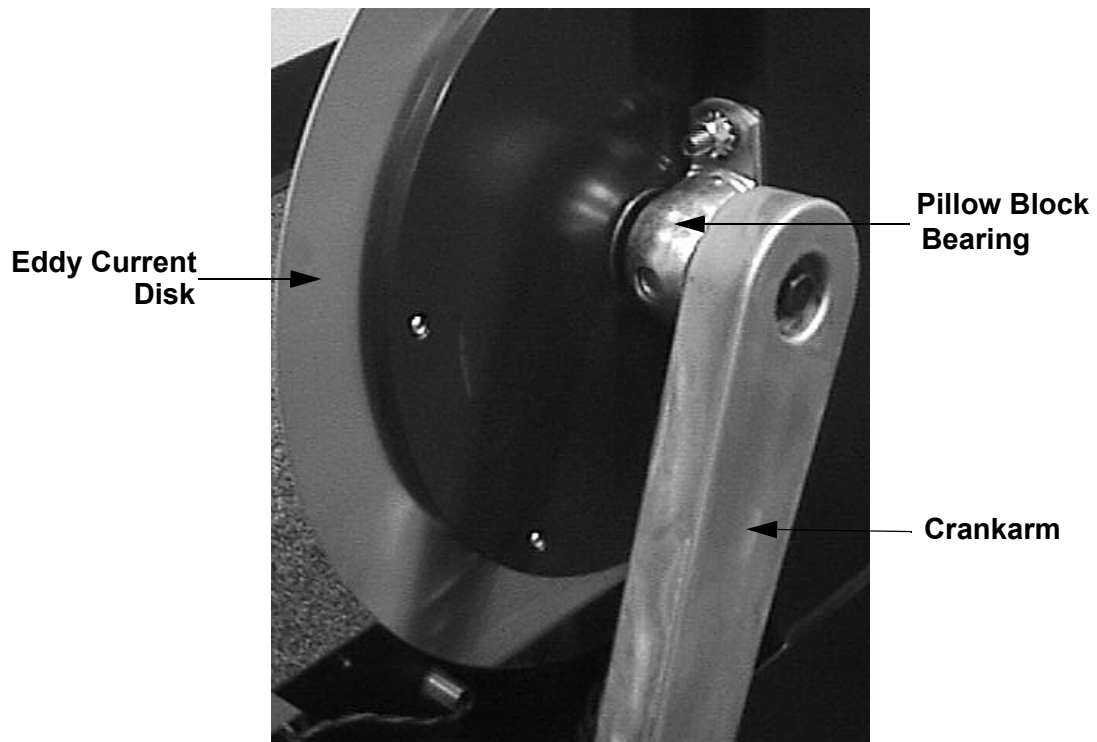
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Remove the stairarm assemblies as described in Procedure 7.22.
4. Remove the crankarm assemblies as described in Procedure 7.10.
5. Remove the magnet assembly as described in Procedure 7.18.
6. Remove tension from the drive belts and remove the pillow block bearings per Procedure 7.11, steps 5 to 8.
7. Slide the step up and input belts off of the input pulley shaft and remove the input pulley and eddy current disc assembly from the drive unit. (See Diagram 7.9)
8. Slide the eddy current disk off of the input pulley shaft (See Diagram 7.10).

Diagram 7.10 - Eddy Current Disk



9. Slide the replacement eddy current disk onto the input pulley shaft.
10. Slide the step up and input belts onto the input pulley shaft as you set the input pulley shaft in it's mounting position in the drive unit.
11. Replace the magnet assembly per Procedure 7.18.
12. Slide the pillow block bearings onto the input pulley shaft.
13. Complete the installation, alignment and tensioning per Procedure 7.11, steps 10 to 15.

Procedure 7.13 - Replacing the Input Pulley Belt

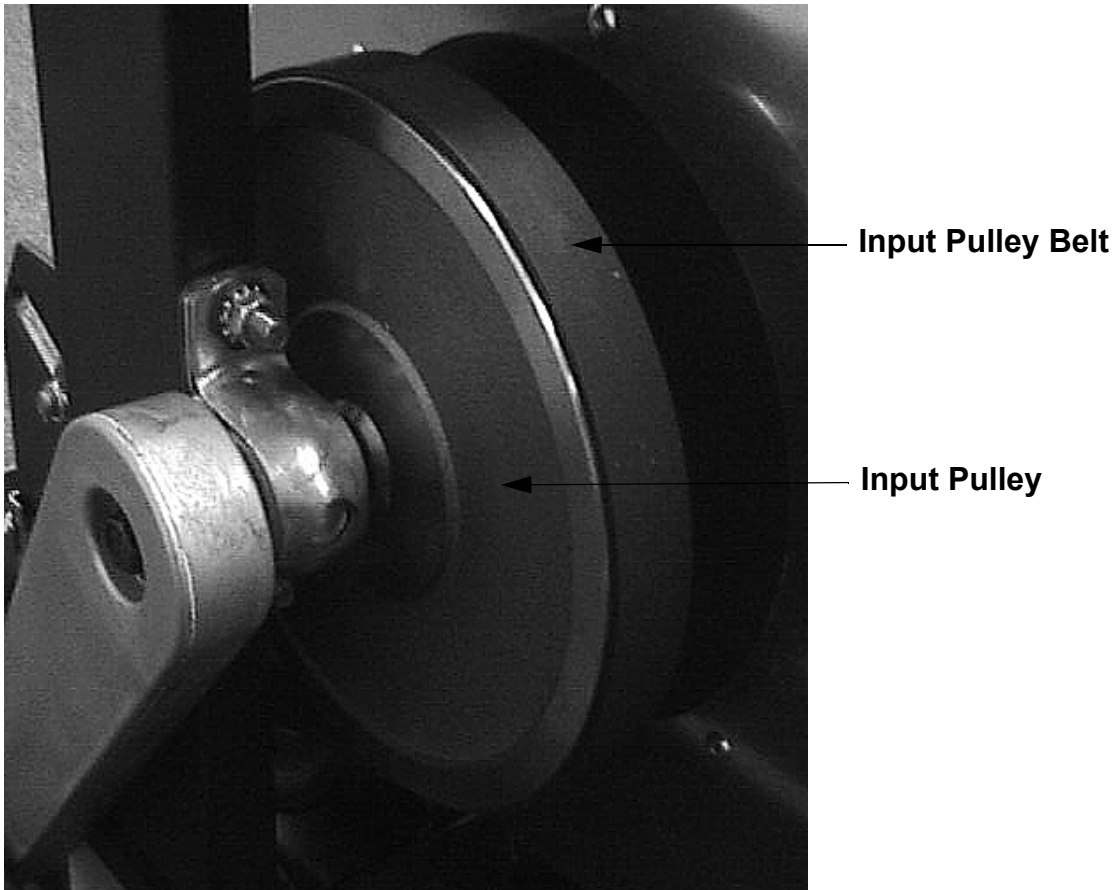
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Remove the stairarm assemblies as described in Procedure 7.22.
4. Remove the crankarm assemblies as described in Procedure 7.10.
5. Remove the magnet assembly as described in Procedure 7.18.
6. Remove tension from the drive belts and remove the pillow block bearings per Procedure 7.11, steps 5 to 8.
7. Slide the step up and input belts off of the input pulley shaft and remove the input pulley and eddy current disc assembly from the drive unit. (See Diagram 7.9)
8. Carefully, lay the EFX on it's side. Remove the bolts that retain mounting plate for the input module and on/off switch. Swing the mounting plate away from the drive unit.
9. Remove the left and right tension bolts, locking tabs and brackets. Slide the step up pulley assembly with both the step up and input belts out of the drive unit.
10. Remove the input pulley belt and place the replacement input pulley belt in it's place on the step up pulley assembly.
11. Set the step up pulley assembly with the step up and input belt at it's mounting position in the drive unit. Replace the tensioning bolts, locking tabs and brackets removed in step 8. Thread the left and right tension bolts into the step up pulley shaft. (See Diagram 7.11 & 7.12)

Diagram 7.11 - Input Pulley Belt



12. Slide the step up and input belts onto the input pulley shaft as you set the input pulley shaft in its mounting position in the drive unit.
13. Replace the magnet assembly per Procedure 7.18.
14. Slide the pillow block bearings onto the input pulley shaft.
15. Complete the installation, alignment and tensioning per Procedure 7.11, steps 10 to 15.

Procedure 7.14 - Replacing the Step-Up Pulley Belt

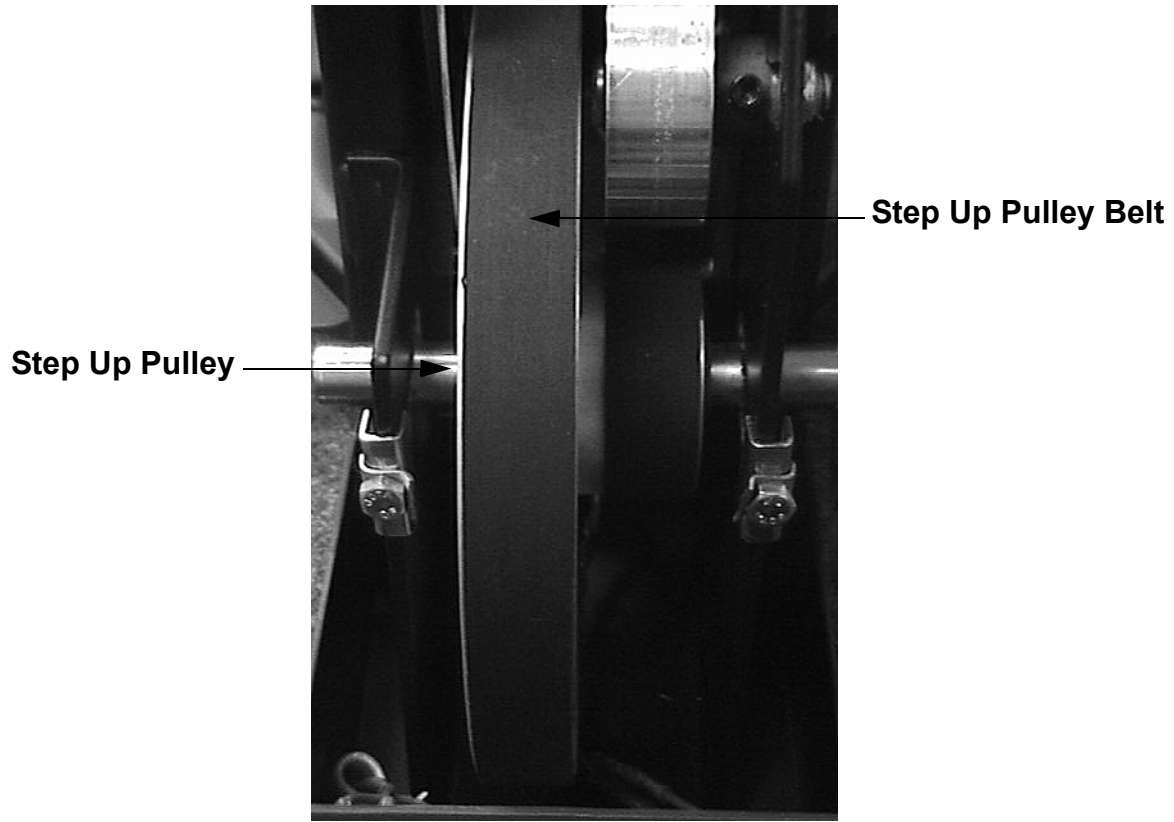
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Remove the stairarm assemblies as described in Procedure 7.22.
4. Remove the crankarm assemblies as described in Procedure 7.10.
5. Remove the magnet assembly as described in Procedure 7.18.
6. Remove tension from the drive belts and remove the pillow block bearings per Procedure 7.11, steps 5 to 8.
7. Slide the step up and input belts off of the input pulley shaft and remove the input pulley and eddy current disc assembly from the drive unit. (See Diagram 7.9)
8. Remove the left and right tension bolts, locking tabs and brackets. Slide the step up pulley assembly with both the step up and input belts out of the drive unit.
9. Remove the step up pulley belt and place the replacement step up pulley belt in its mounting position on the step up pulley assembly.
10. Set the step up pulley assembly with the step up and input belt at it's mounting position in the drive unit. Replace the tensioning bolts, locking tabs and brackets removed in step 8. Thread the left and right tension bolts into the step up pulley shaft.
11. Slide the step up and input belts onto the input pulley shaft as you set the input pulley shaft in it's mounting position in the drive unit.

Diagram 7.12 - Step Up Pulley Belt



12. Replace the magnet assembly per Procedure 7.18.
13. Slide the pillow block bearings onto the input pulley shaft.
14. Complete the installation, alignment and tensioning per Procedure 7.11, steps 10 to 15.

Procedure 7.15 - Replacing the Input Pulley Assembly

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Remove the stairarm assemblies as described in Procedure 7.22.
4. Remove the crankarm assemblies as described in Procedure 7.10.
5. Remove the magnet assembly as described in Procedure 7.18.
6. Remove tension from the drive belts and remove the pillow block bearings per Procedure 7.11, steps 5 to 8.
7. Carefully, lay the EFX on it's side. Remove the bolts that retain mounting plate for the input module and on/off switch. Swing the mounting plate away from the drive unit.
8. Slide the step up and input belts off of the input pulley shaft and remove the input pulley and eddy current disc assembly from the drive unit. (See Diagram 7.9, 7.11 & 7.12)
9. Slide the eddy current disk off of the input shaft assembly.
10. Slide the eddy current disk onto the replacement input shaft assembly.
11. Slide the step up and input belts onto the input pulley shaft as you set the input pulley shaft in it's mounting position in the drive unit.
12. Replace the magnet assembly per Procedure 7.18.
13. Slide the pillow block bearings onto the input pulley shaft.
14. Complete the installation, alignment and tensioning per Procedure 7.11, steps 10 to 15.

Procedure 7.16 - Replacing the Step-Up Pulley Assembly

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Remove the stairarm assemblies as described in Procedure 7.22.
4. Remove the crankarm assemblies as described in Procedure 7.10.
5. Remove the magnet assembly as described in Procedure 7.18.
6. Remove tension from the drive belts.
7. Slide the step up and input belts off of their pulleys and remove the input pulley assembly from the drive unit. (See Diagram 7.9, 7.11 & 7.12)
8. Remove the left and right tension bolts, locking tabs and brackets.
9. Carefully, lay the EFX on it's side. Remove the bolts that retain mounting plate for the input module and on/off switch. Swing the mounting plate away from the drive unit.
10. Slide the step up pulley assembly with both the step up and input belts out of the drive unit.
11. Place the step up and input belts on the replacement step up pulley.
12. Set the replacement step up pulley assembly with the step up and input belt at it's mounting position in the drive unit. Replace the tensioning bolts, locking tabs and brackets removed in step 8. Thread the left and right tension bolts into the step up pulley shaft.
13. Slide the step up and input belts onto the input pulley assembly as you set the input pulley assembly in it's mounting position in the drive unit.
14. Replace the magnet assembly per Procedure 7.18.
15. Slide the pillow block bearings onto the input pulley shaft.
16. Complete the installation, alignment and tensioning per Procedure 7.11, steps 10 to 15.

Procedure 7.17 - Replacing the Speed Sensor Assembly

Removing the Speed Sensor Assembly

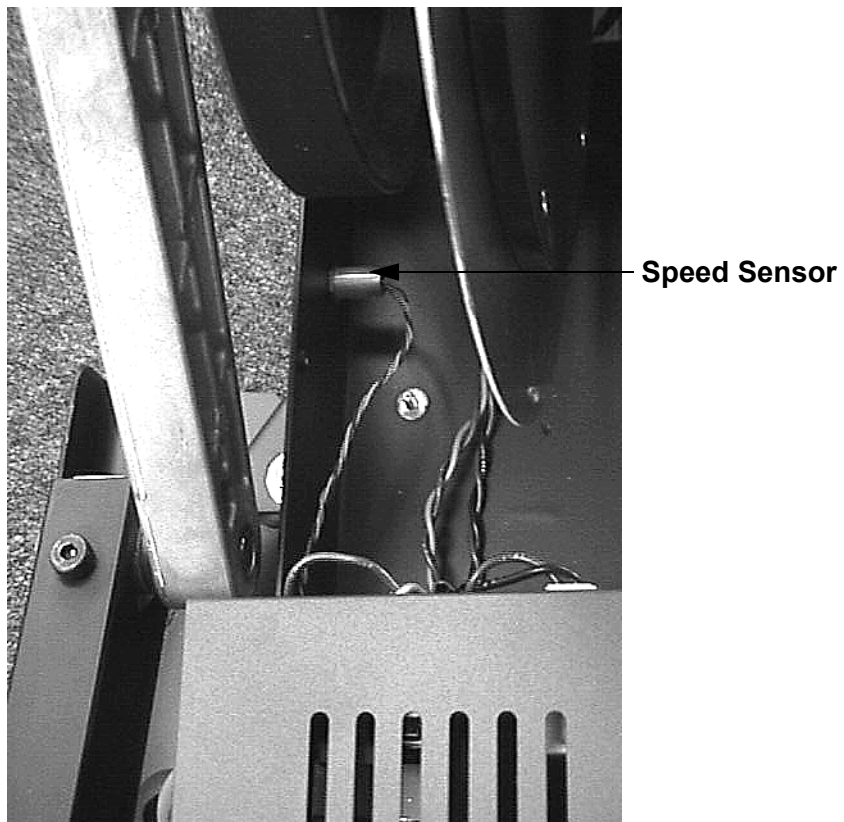
1. Set the on off/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear covers as described in Procedure 7.1.
3. Disconnect the speed sensor cable from the lower PCA. (See Diagram 7.13)
4. Remove the hardware that secures the speed sensor assembly to the frame.

Diagram 7.13 - Speed Sensor



Replacing the Speed Sensor Assembly

5. Position the speed sensor at its mounting position.
6. Replace the hardware that secures the speed sensor to the frame.
7. Reconnect the speed sensor cable to the lower PCA.
8. Re-install the rear cover as described in Procedure 7.1, then check the operation of the C532 as described in Section Four.

Procedure 7.18 - Replacing the Eddy Current Magnet Assembly

Removing the Magnet Assembly

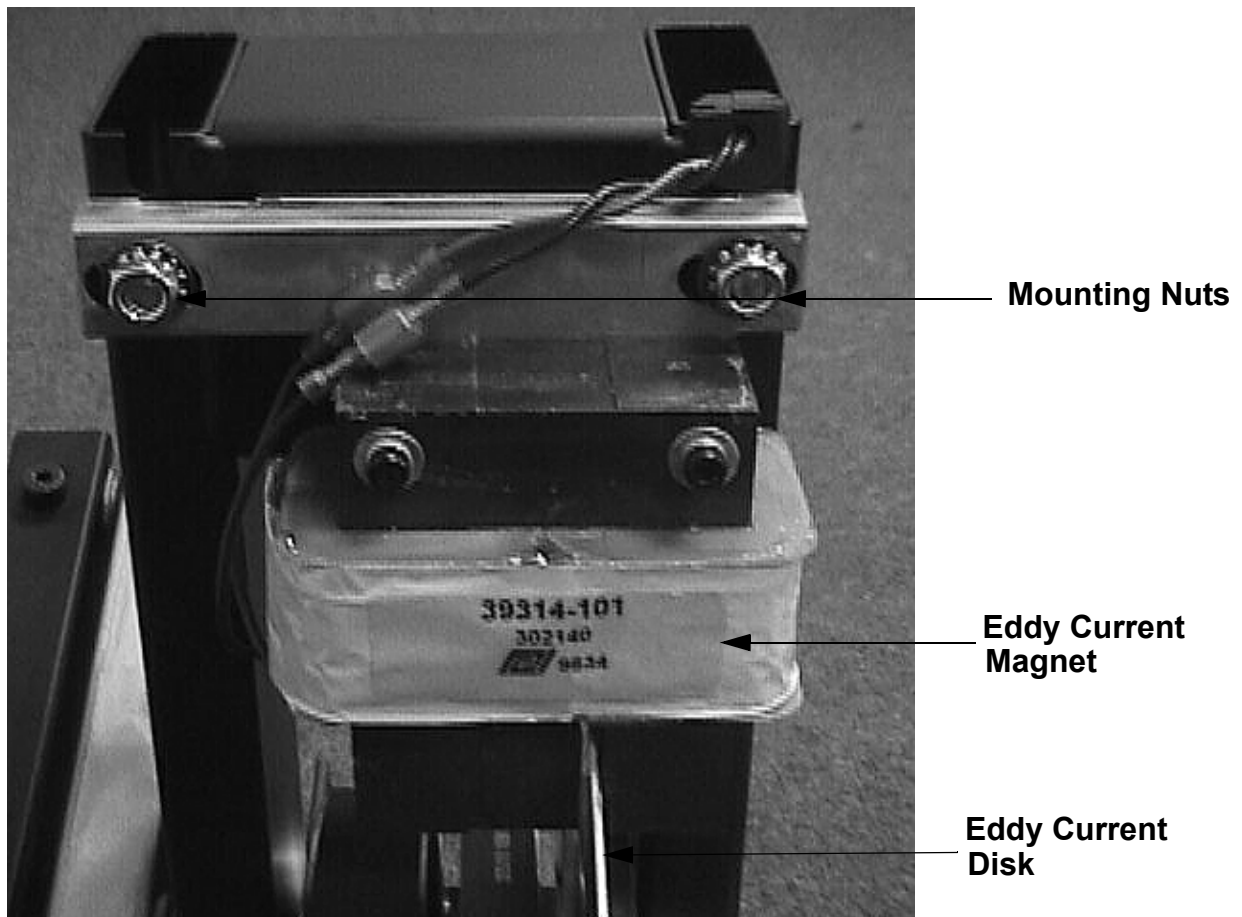
1. Set the on/off switch in the "off" position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Disconnect the magnet cable from the magnet assembly.
4. Remove the nuts that secure the magnet assembly to the drive unit. Remove the magnet from the drive unit.

Diagram 7.14 - Eddy Current Magnet



Replacing the Magnet Assembly

5. Position the magnet assembly at its mounting position so that the eddy current disk is centered between the magnet poles.
6. Replace and hand tighten the magnet assembly mounting bolts. Torque the magnet assembly mounting bolts to 60 in/lbs.
7. Reconnect the magnet cable to the magnet assembly.
8. Re-install the rear cover as described in Procedure 7.1, then check the operation of the EFX as described in Section Four.

Procedure 7.19 - Replacing a Stairarm Pivot Block

Removing the Stairarm Pivot Block

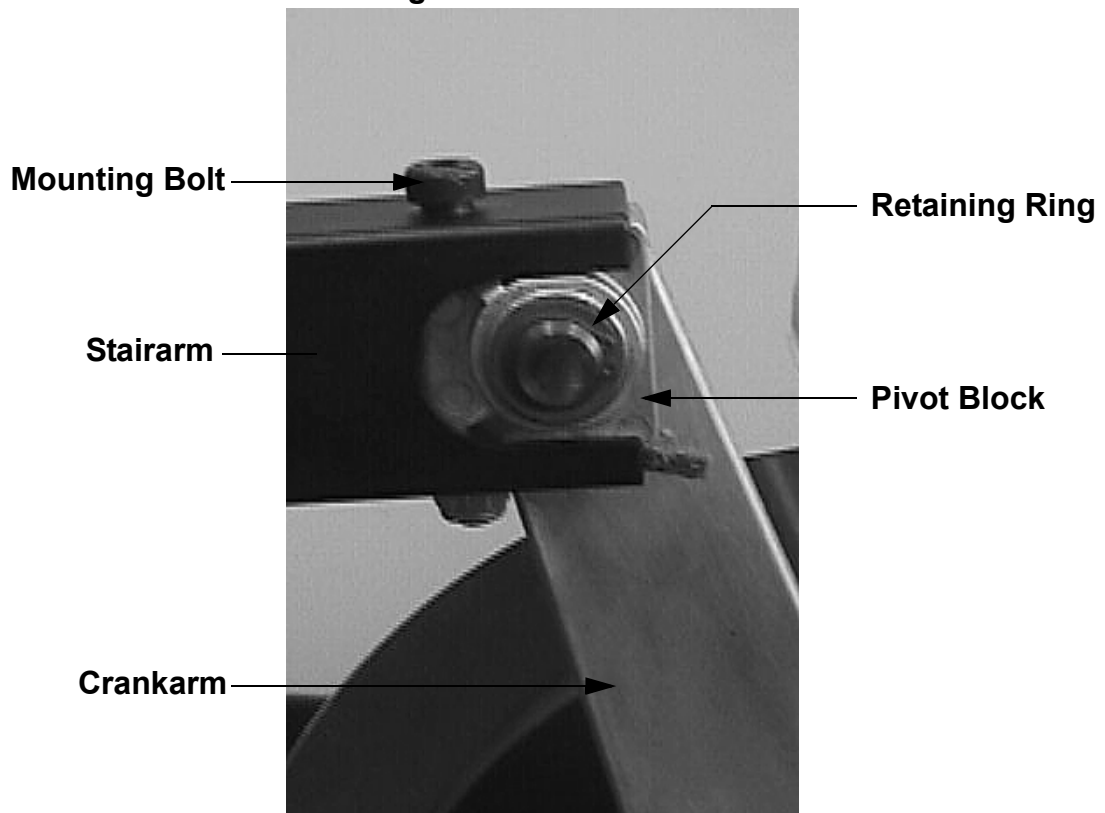
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Remove the mounting bolt and nut that fastens the stairarm pivot block to the stairarm. (See Diagram 7.15)
4. Slide the stairarm off of the stairarm pivot block.
5. Remove the stairarm pivot block retaining ring from the crankarm pin. Slide the stairarm pivot block off of the crankarm pin. If the stairarm pivot block is being replaced because of excessive wear, check the condition of the crank arm pin, it may be necessary to replace the crankarm.

Diagram 7.15 - Stairarm Mounting.



6. Slide the stairarm pivot block onto the crankarm pin and replace the retaining ring removed in step 5.
7. Slide the stairarm onto the stairarm pivot block. Install and hand tighten the stairarm pivot block mounting hardware. Torque the stairarm pivot block mounting bolt to 15 ft./lbs.
8. Replace the rear cover per Procedure 7.1.

Procedure 7.20 - Replacing a Wheel, Wheel Axle or Wheel Bearings

Procedure

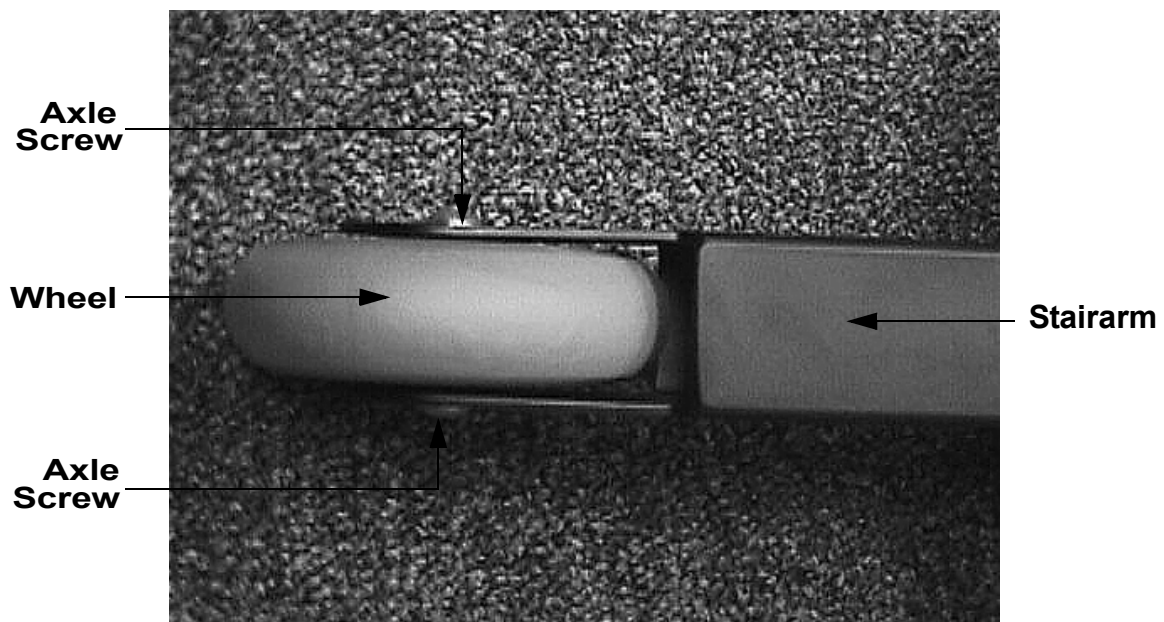
1. Set the on/off switch in the "off" position, then unplug the power cord from the wall outlet.

WARNING

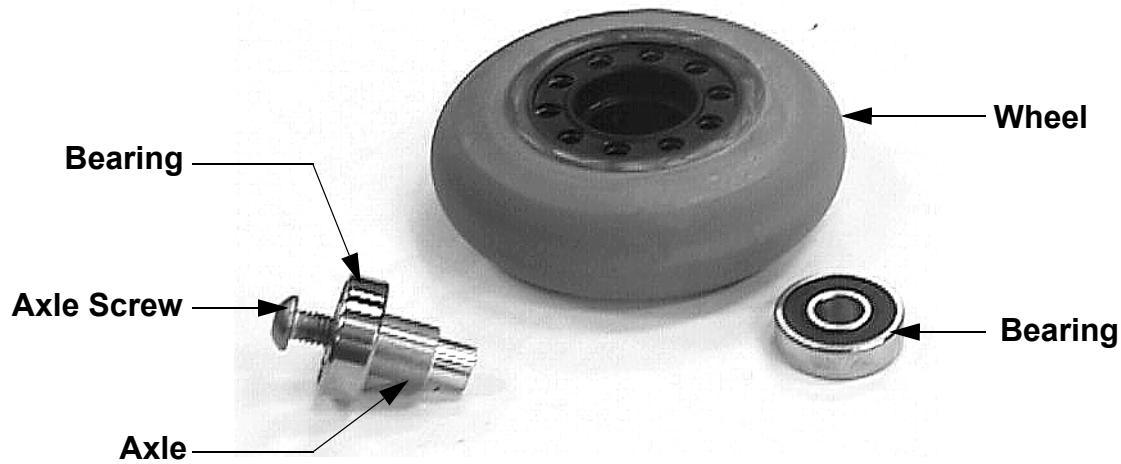
Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the screws from the wheel axle. If when removing the second wheel axle screw, the axle rotates and the screw does not unthread, insert a 5/32" allen wrench into the end of the axle from which the screw has been removed. The allen wrench will hold the axle while you remove the remaining screw. Remove the wheel assembly from the stairarm.

Diagram 7.16- Wheel Assembly



3. Thread one of the axles screws a few turns into one end of the axle. Hold the wheel assembly, with the axle screw downward, over a solid surface. Press the axle screw firmly against the solid surface until the opposite bearing is pressed out of the wheel assembly. Remove the axle screw from the axle and then remove the axle from the wheel. Insert a blunt object, such as a screwdriver handle, into the wheel and press the remaining bearing out of the wheel (See Diagram 7.17).

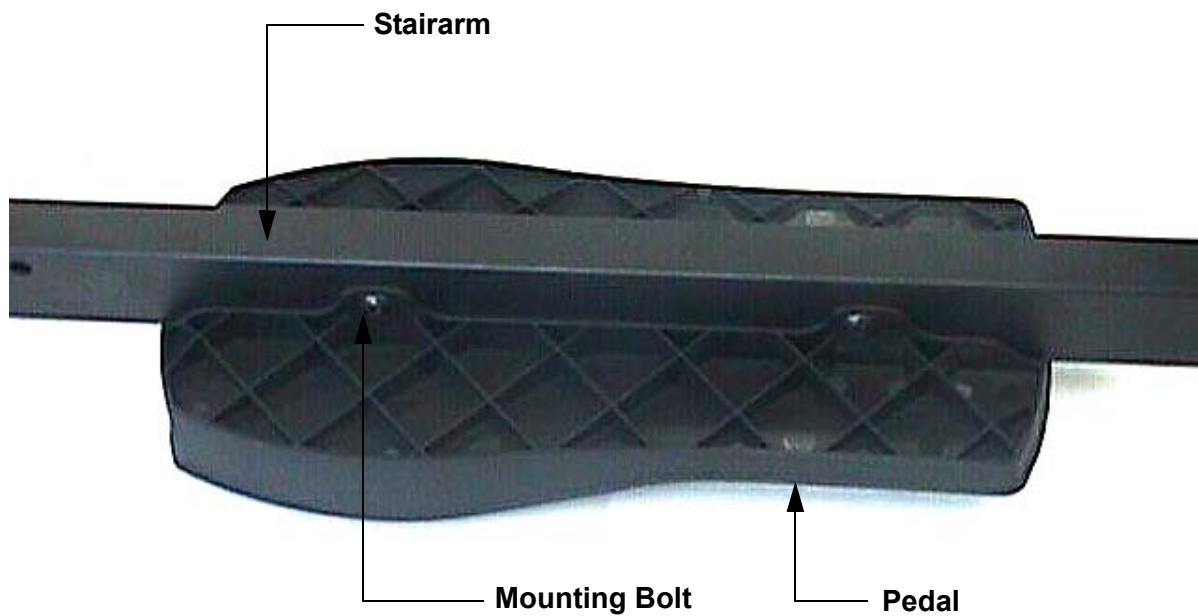
Diagram 7.17 - Wheel Assembly

4. Reassemble the wheel assembly using such replacement parts as required. Firmly press one of the bearings into the wheel by hand. Insert the axle through the wheel and into the bearing that is pressed into the wheel. Slide the remaining bearing over the axle and press the bearing into the wheel by hand. Be sure that both bearings are fully pressed into the wheel bearing pockets.
5. Place the wheel into the stairarm and insert and hand tighten the wheel axle screws. Torque the wheel axle screws to 25 in/lbs.

Procedure 7.21 - Replacing a Stairarm Pedal

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet
2. Loosen and remove the two bolts that fasten the stairarm pedal onto the stairarm.
3. Remove the stairarm pedal from the stairarm.
4. Set the replacement stairarm pedal at it’s mounting position on the stairarm.
5. Install and hand tighten the stairarm pedal mounting hardware removed in step 2. Torque the stairarm pedal mounting bolts to 60 in/lbs.

Diagram 7.18 - Stairarm Pedal



Procedure 7.22 - Replacing a Stairarm

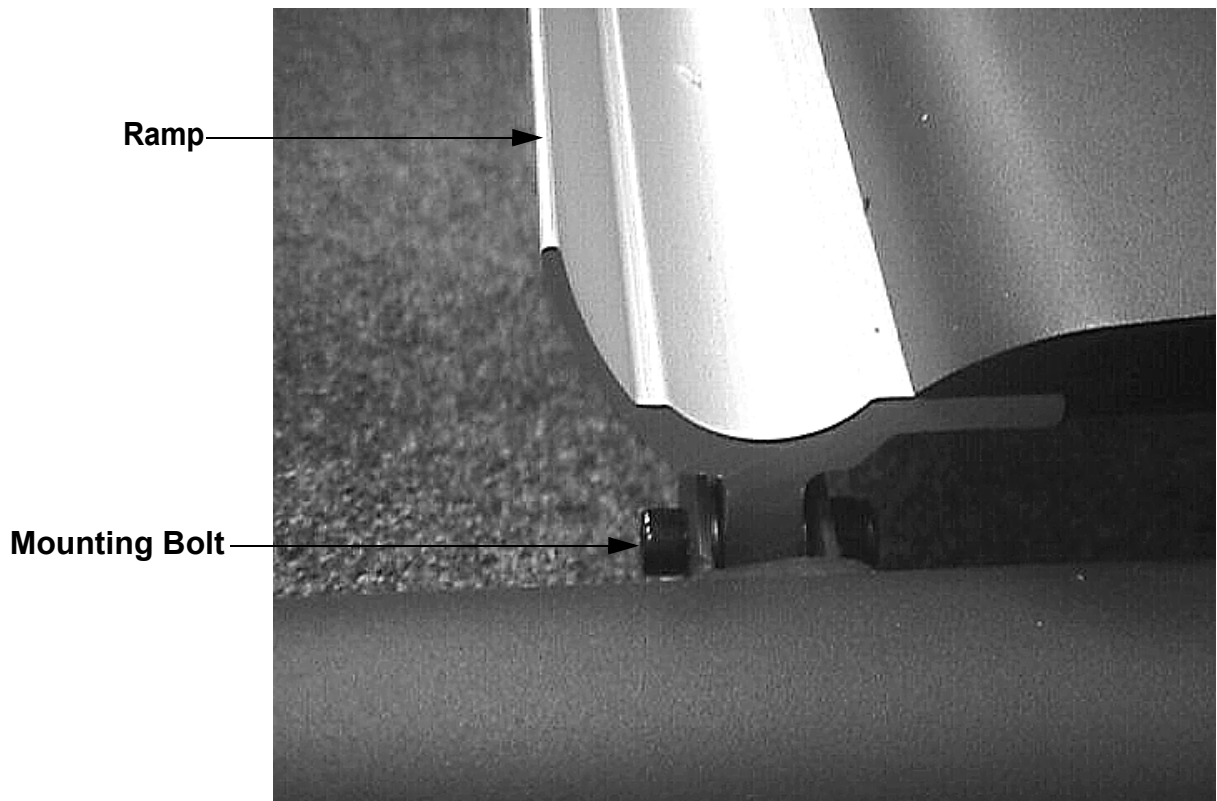
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.
2. Remove the rear cover as described in Procedure 7.1.
3. Remove the mounting bolt and nut that fastens the stairarm pivot block to the stairarm. (See Diagram 7.15)
4. Slide the stairarm off of the stairarm pivot block.
5. Loosen and remove the two bolts that fasten the stairarm pedal onto the stairarm.
6. Remove the stairarm pedal from the stairarm.
7. Set the stairarm pedal at it’s mounting position on the replacement stairarm.
8. Install and hand tighten the stairarm pedal mounting hardware removed in step 5. Torque the stairarm pedal mounting bolts to 60 in/lbs.
9. Remove and replace the wheel per procedure 7.20
10. Slide the replacement stairarm assembly onto the stairarm pivot block. Install and hand tighten the stairarm pivot block mounting hardware. Torque the stairarm pivot block mounting hardware until no axial play can be felt between the stairarm pivot block and stairarm. The stairarm tube must be fully collapsed against the stairarm pivot block. If there is a gap between the upper or lower wall of the stairarm tube, re-torque the stairarm to stairarm pivot block mounting bolts. The stairarm should still easily pivot on the stairarm pivot block.
11. Replace the rear cover per Procedure 7.1.

Procedure 7.23 - Replacing All or Part of a Ramp Assembly

Procedure

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.
2. Remove the rear cover per Procedure 7.1 and pivot both stairarms to the rear of the unit.
3. Remove the four bolts that fasten the ramp end bracket to the ramp. Lower the ramp assembly until it is resting on the frame. (See Diagram 5.2 & 7.20)
4. Do not allow the ramp end bracket to rotate on the lift motor drive screw. If the ramp end bracket is rotated, the lift motor must be re-calibrated per Procedure 5.2.
5. Remove the two ramp mounting bolts (See Diagram 7.19). Remove the ramp from the EFX frame.

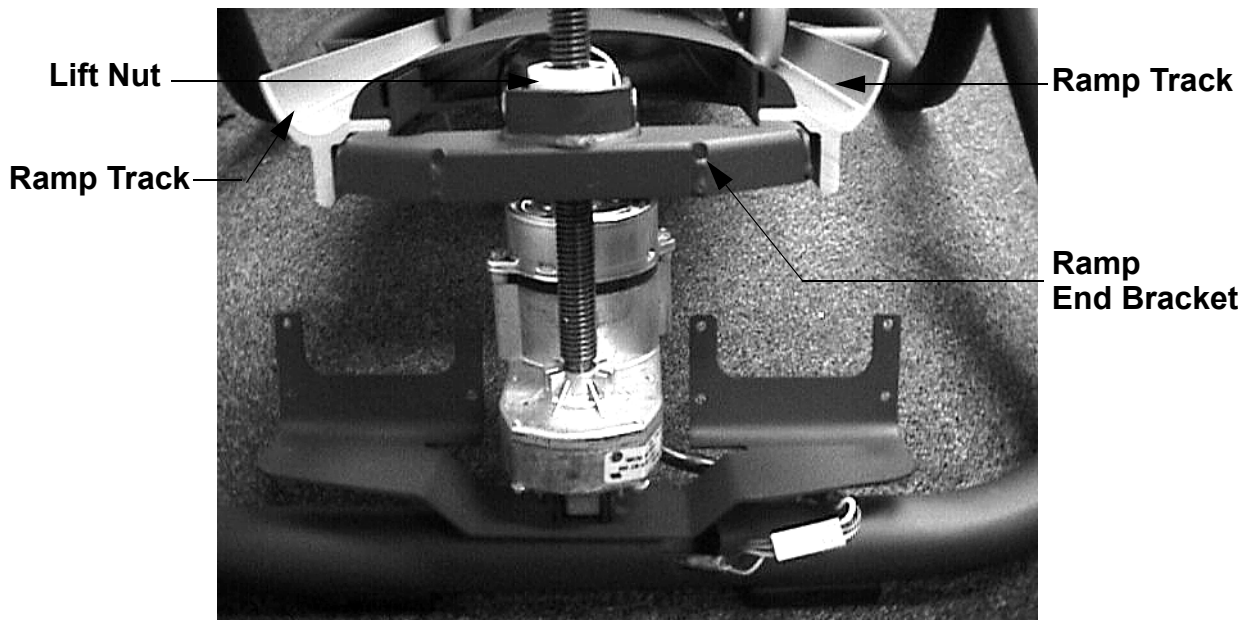
Diagram 7.19 - Ramp Pivot



6. If you are replacing a ramp base, remove the seven screws that fasten each ramp track to the ramp base. (See Diagram 5.2)
7. If you are replacing one or more ramp tracks remove the seven ramp track screws

associated with the ramp track(s) that you are replacing.

Diagram 7.20 - Ramp Assembly



8. Set the ramp track(s) in their mounting position on the ramp base, thread and hand tighten the ramp track mounting screws. Torque the ramp track mounting screws to 200 in/lbs.
9. Set the ramp assembly in it's mounting position and insert the two ramp mounting bolts removed in step 5.
10. If ramp end bracket has been replaced or the ramp end bracket was rotated on the lift motor drive screw, re-calibrate the lift motor per Procedure 5.2.
11. Align the ramp assembly with the ramp end bracket and replace and tighten the four mounting screws removed in step 3.
12. Replace the front cover per Procedure 7.1.

Procedure 7.24 - Replacing a Handlebar

Removing a Handlebar

1. Slide the handlebar boots up the handlebars.
2. Loosen the fasteners that secure the handlebars to frame tubes.
3. Carefully slide the handlebars out of the frame tubes. Disconnect the upper interconnect cable from the lower interconnect cable.

CAUTION

Do not allow the lower interconnect cable to retract into the frame tube.

4. Remove the screws that secure the display enclosure to the display plate. If you are replacing the left handlebar, disconnect the upper interconnect cable from the upper PCA.
5. Loosen the fasteners that secure the handlebar to the upper display plate. Set aside the handlebar.
6. If you are replacing the left handlebar, remove the upper interconnect cable from the handlebar and slide it into the replacement handlebar.

Replacing a Handlebar

7. Secure the handlebar to the upper display plate with the hardware removed in Step 5.
8. If you replaced the left handlebar, reconnect the upper display cable to the upper PCA.
9. Replace the display housing, using the hardware removed in Step 4.
10. Hold the handlebars near their final mounting position. Re-connect the upper interconnect cable to the lower interconnect cable. Carefully slide the handlebars into the frame tubes.
11. Secure the handlebars to the frame tubes using the hardware removed in step 2. Slide the boots over the junction between the handlebars and frame tubes.

Procedure 7.25 - Replacing the Stub Tensioner

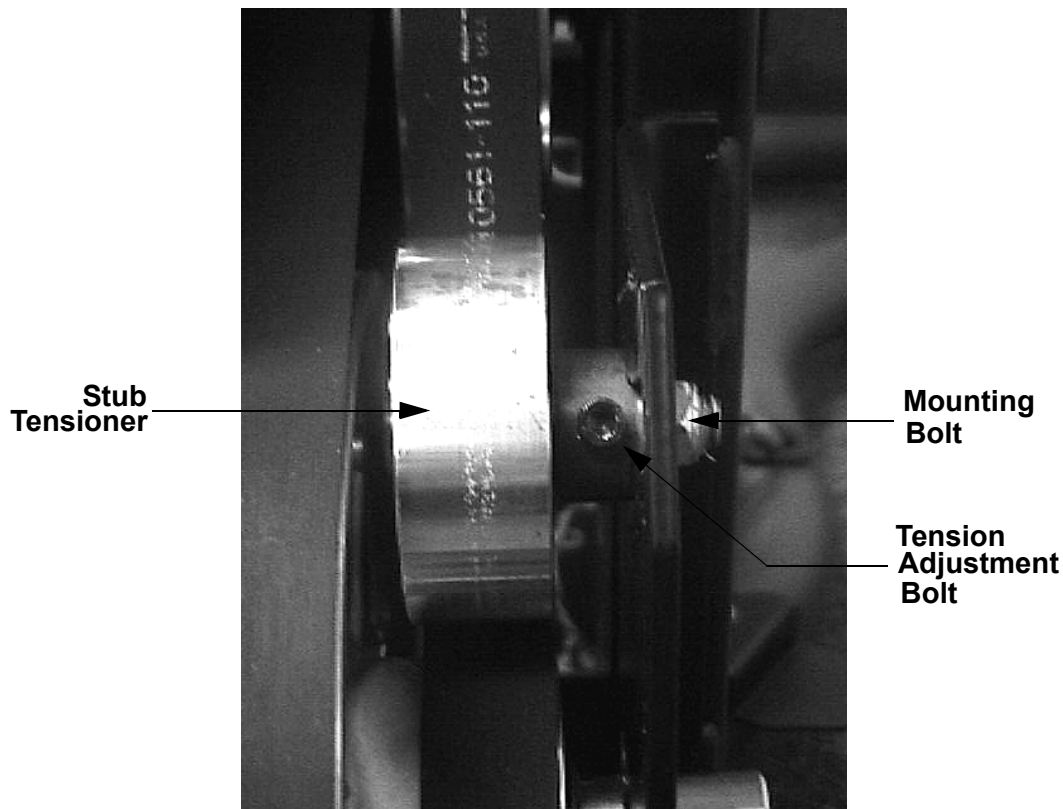
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

WARNING

Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Remove the rear cover as described in Procedure 7.1.
3. Remove the stairarm assemblies as described in Procedure 7.22.
4. Remove the crankarm assemblies as described in Procedure 7.10.
5. Remove tension from the drive belts per Procedure 7.11, steps 5 and 6.
6. Carefully, lay the EFX on it's side. Remove the bolts that retain mounting plate for the input module and on/off switch. Swing the mounting plate away from the drive unit.
7. Slide the step up and input belts off of the input pulley and remove the input pulley assembly from the drive unit. (See Diagram 7.21)

Diagram 7.21 - Stub Tensioner



8. Remove the stub tensioner from the drive unit.
9. Loosely mount the new stub tensioner in it's mounting position.
10. Slide the input pulley assembly through the step up pulley and input pulley drive belts.
Loosely mount the input pulley in place.
11. Complete the installation, alignment and tensioning per Procedure 7.11, steps 11 to 15.

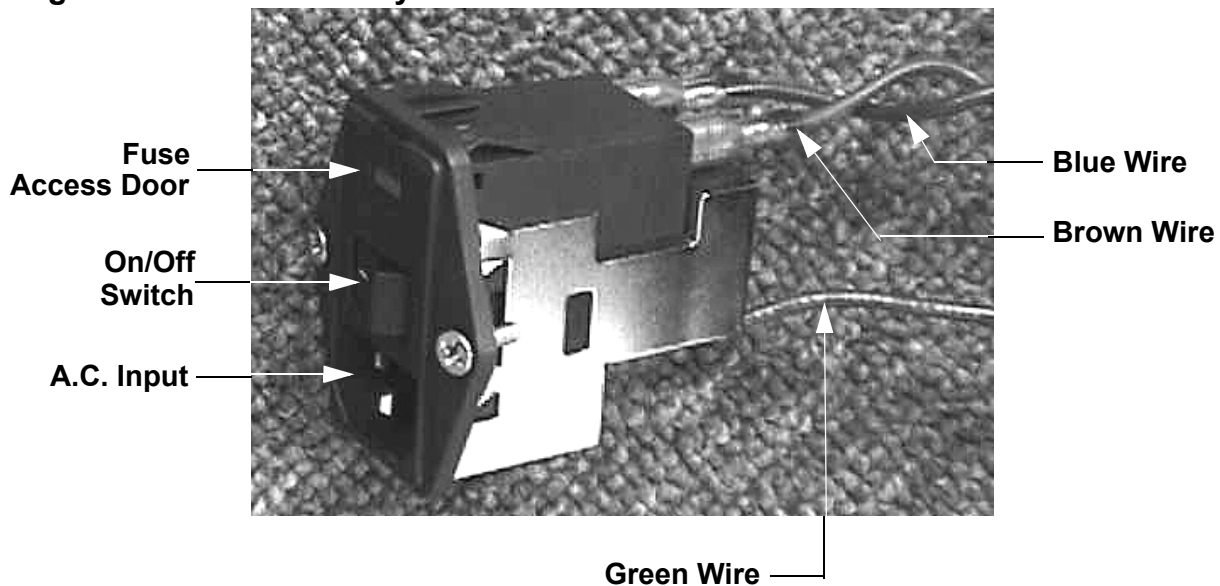
Procedure 7.26 - Replacing a Power Entry Module (Units manufactured after 10-15-2000)

Procedure

Note: The power entry module on this EFX is a multifunction unit. It functions as a power entry module, A.C. line fuse holder, on/off switch and A.C. line filter.

1. Set the on/off switch in the off position. Remove the A.C. line cord from the A.C. outlet and from the power entry module.
2. Remove the rear cover per Procedure 7.1.

Diagram 7.22 - Power Entry Module



3. Remove the blue wire from terminal D and the brown wire from terminal A of the power entry module.
4. Remove the two screws that mount the power entry module to the rear cover support.
5. Open the fuse compartment and remove both fuses (See Procedure 7.27). Check both fuses with an ohmmeter. They should read approximately 1Ω or less. Replace any fuse that reads significantly high.
6. Install the tested fuses, from step 5, in the replacement power entry module.
7. Set the replacement power entry module at its mounting position, secure the power entry

module with the screws removed in step 4.

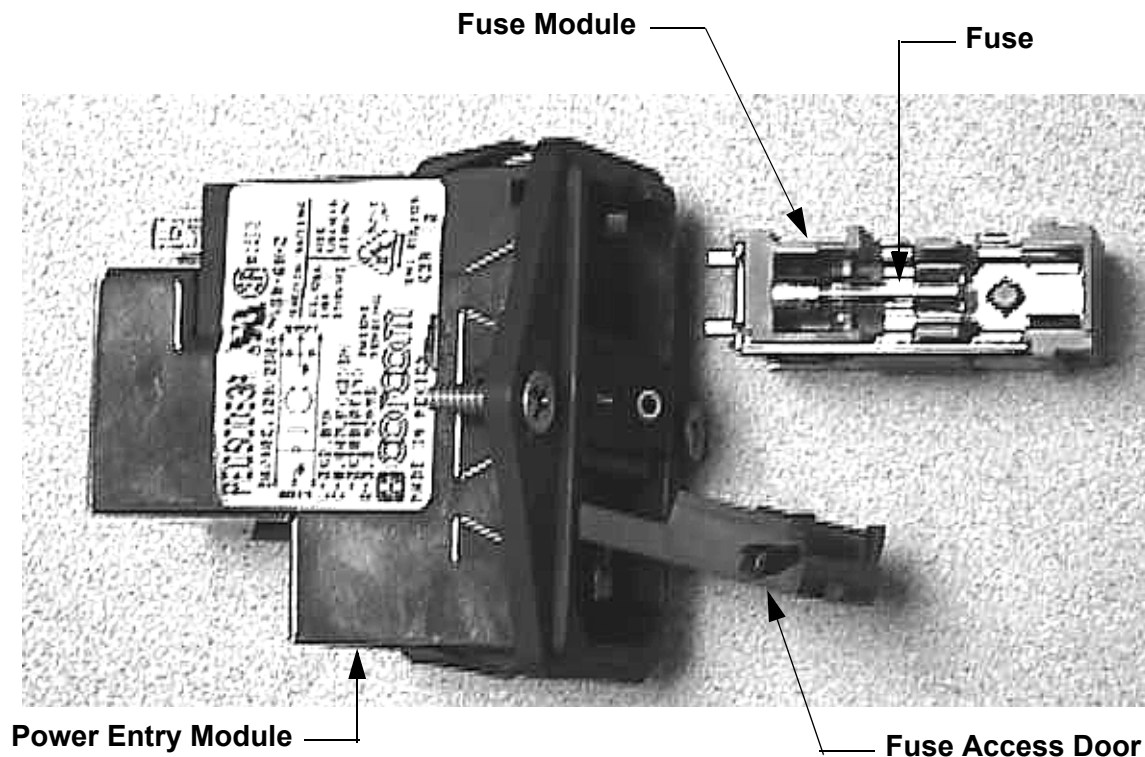
8. Replace the wires removed in step 3. Connect the blue wire to terminal D and the brown wire to terminal A of the power entry module.
9. Replace the cover per Procedure 7.1.
10. Insert the A.C. line cord in the power entry module and the A.C. outlet.
11. Set the on/off switch in the on position and test the EFX per Section Four.

Procedure 7.27 - Replacing a Power Entry Module Fuse (Units manufactured after 10-15-2000)

Procedure

1. Set the on/off switch in the off position. Remove the A.C. line cord from the A.C. outlet and from the power entry module.
2. Using a thin bladed screwdriver, carefully pry the fuse access door open (See Diagram 7.23).

Diagram 7.23 - Power Entry Module Fuse

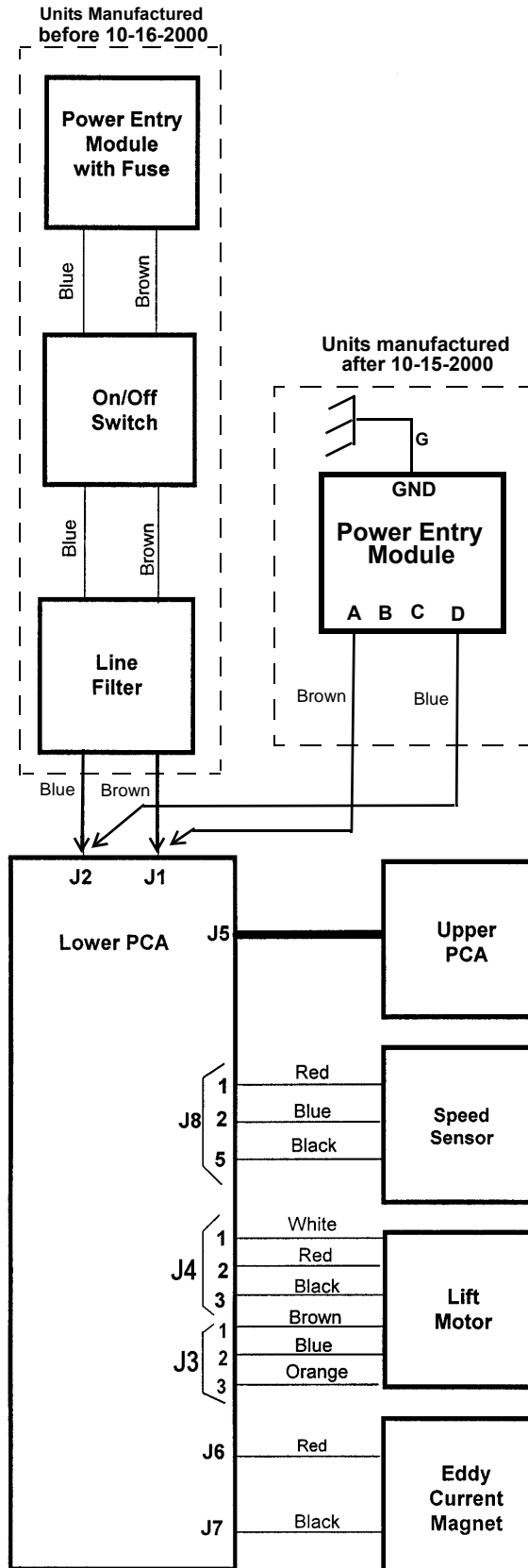


3. Using the thin bladed screwdriver, carefully pry the fuse module out of the power entry module.
4. The fuse module contains two fuses, carefully pry one or both fuses out of the fuse module, as required.
5. Snap the replacement fuse(s) into the fuse module.
6. Slide the fuse module back into the power entry module and close the fuse access door.

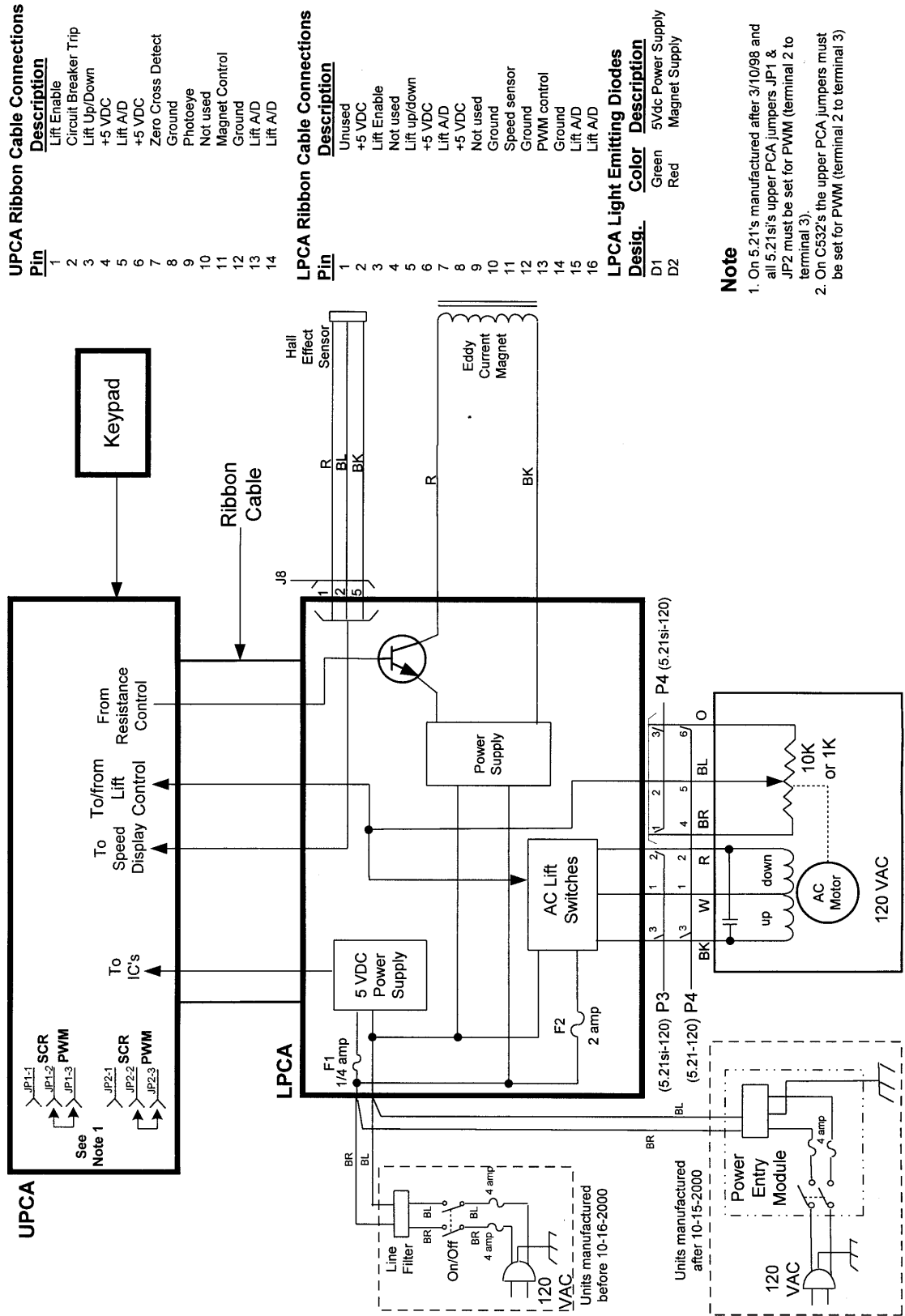
7. Insert the A.C. line cord in the power entry module and the A.C. outlet.

Set the on/off switch in the on position and test the EFX per Section Four.

Wiring Diagram 8.1 - C532 120 Vac



Block Diagram 8.2 - C532 120 Vac



UPCA Ribbon Cable Connections

Pin	Description
1	Lift Enable
2	Circuit Breaker Trip
3	Lift Up/Down
4	+5 VDC
5	Lift A/D
6	+5 VDC
7	Zero Cross Detect
8	Ground
9	Photoeye
10	Not used
11	Magnet Control
12	Ground
13	Lift A/D
14	Lift A/D

LPCA Ribbon Cable Connections

Pin	Description
1	Unused
2	+5 VDC
3	Lift Enable
4	Not used
5	Lift up/down
6	+5 VDC
7	Lift A/D
8	+5 VDC
9	Not used
10	Ground
11	Speed sensor
12	Ground
13	PWM control
14	Ground
15	Lift A/D
16	Lift A/D

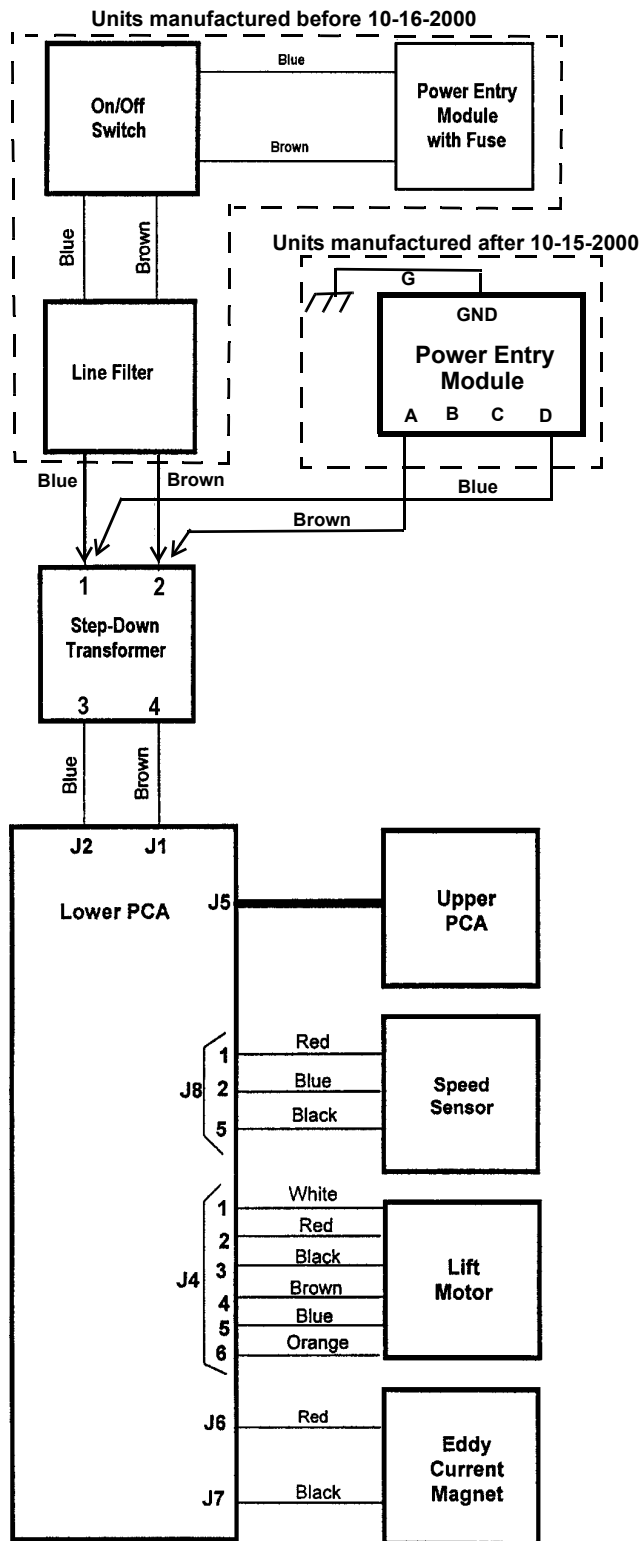
LPCA Light Emitting Diodes

Desig.	Color	Description
D1	Green	5Vdc Power Supply
D2	Red	Magnet Supply

Note

- On 5.21's manufactured after 3/10/98 and all 5.21's upper PCA jumpers JP1 & JP2 must be set for PWM (terminal 2 to terminal 3).
- On C532's the upper PCA jumpers must be set for PWM (terminal 2 to terminal 3)

Wiring Diagram 8.3 - C532 240 Vac



Block Diagram 8.4 - C532 240 Vac

