

# C556 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

### C556 Serial Codes and Manufacturing Dates

The C556 has been manufactured in two versions. The applicable serial codes and manufacturing dates associated with each version will be detailed below. When servicing a C556 it is critical that you are aware of which version of C556 you are servicing. The differences in the versions may greatly impact service requirements and procedures. For convenience, the versions detailed below will be referred to as version 1 or version 2 in the remainder of this service manual. Any procedures that do not reference a specific version is applicable to all versions of the C556.

**Version 1** was manufactured between May 2000 and July 2001. The serial codes associated with version 1 are 6Q, 70, 8Y, 8Z, AC, AD, AN and BB.

**Version 2** was manufactured between July 2001 and the present. The serial codes associated with version 2 are DA, DB, EW, HD and HE.

### Right, Left, Front, and Back Conventions

In this manual, right, left, front, and back are from the perspective of a user standing on the C556, 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 EFX, the power cord must be disconnected from the wall outlet. Always ensure that the EFX is unplugged from the wall outlet when you inspect or adjust the EFX, or when you isolate, remove, or replace an EFX 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 EFX operation.
- A pinching hazard exists when the unit is operated by turning the crankarms by hand. It is possible to seriously pinch a finger between the crankarm and stairarm. The stairarms should be removed before operating the crankarms by hand.

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

- When it is necessary to lift or move the EFX, ensure that the EFX has adequate support and that you use proper lifting techniques.

**Safety** guidelines you should know and follow include:

- Read the owner's manual and follow all operating instructions.
- Operate the EFX on a solid, level surface.

- Visually check the EFX 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 EFX.
- When operating the EFX, 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 EFX, while performing service.
- 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](http://www.precor.com/Dealer)".

## Tools Required

Multimeter  
Anti-static kit  
4" - 6" gear puller  
"C" clamp or Carpenter's clamp  
US and metric end wrench set  
US and metric socket wrench set  
Torque wrench, 200 in./lbs.  
Torque wrench, 200 ft./lbs

Allen wrench set  
Screwdriver set  
1/2" allen key, socket wrench mounted  
Precor part number 20030-117 belt gauge  
Straight edge

## 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 C556 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 the rear covers.
2. Check the step up and input belt alignment and tension as in Procedure 5.3.
3. Replace the rear cover.

## **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
- 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 C556 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. The C556 display does not utilize key positions #2 and #3, however, they must be counted to correctly locate keys #4 through #6. On the C556 display key #1 is the **RESET** key and key #4 is the **QUICK START** key.

### 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**

### Diagram 3.1 - C556 Display Panel



## Procedure 3.2 - Accessing the Diagnostic Program

The EFX diagnostic software cycles through the following tests:

- Display Test
- Keyboard Test
- Heart Rate Test
- Brake (resistance) Test

### 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. The message **DISPLAY TEST** will be displayed followed by every LED on the display being illuminated. Check each LED segment to ensure that all of the segments are illuminated. Press the **ENTER** key to advance to the keyboard test.
4. The message **KEYBOARD TEST** will be displayed followed by a graphical representation of each key position on the display housing. As each key on the display is pressed the key representation is turned "off", indicating that the key is functioning. Check each key in this manner, including the numeric keyboard. Press and hold the **ENTER** key for 2 seconds to advance to the heart rate test.
5. The message **HEART RATE TEST** will be displayed followed by the unfiltered (U), filtered (F) and polar (P) heart rate readings if the heart rate option is installed in the C556 and a chest strap transmitter or a test transmitter is being used. If the heart rate option is not installed in the C556, the message **NO HEART RATE RECEIVER** will be displayed instead of the heart rate readings. Press the **ENTER** key to advance to the brake test.
6. The message **BRAKE TEST** will be displayed followed the resistance level and brake level readings. This test allows you to test the brake (resistance) at each resistance level. Press the **ENTER** key to exit the diagnostics program.



## 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 C556** banner scrolling, press keys **RESET,6,5**, sequentially. The message **ODOMETER** will be displayed followed by the total number of strides accumulated. The total number of strides can be converted to miles by dividing by 2241 or to kilometers by dividing by 1392.5. Press the **ENTER** key to advance to total hours.
3. The message **HOURS** will be displayed followed by the total number of hours that the C556 has been in use. Press the **ENTER** key to advance to software version.
4. The message **SOFTWARE VERSION** will be displayed followed by the software versions of the upper and lower PCA's. For example, **UPPER 1.01 LOWER 1.01**. Press the **ENTER** key to advance to error log.
5. The message **ERROR LOG** will be displayed followed by the error in log position 1. Each log entry shows the log position, the stride count when the error occurred and the hour meter when the error occurred. For example; **1 ER21 123456 STR 45678 HRS**. The error log can record up to ten error conditions. The error code in position one will be the most recent error and the error in position ten will be the oldest error. If more than ten errors have been logged, only the ten most recent will be displayed. When a new error is logged, each existing error is pushed down one position and the error in position 10, if any, is lost. Use the **▲** and **▼** keys to move through the log. Pressing and holding the **QUICK START** key for four seconds will clear the log. 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. The message **SELECT LANGUAGE** will be displayed followed by the currently selected language. Use the ▲ and ▼ keys to select the language preference. Press the **ENTER** key to advance to units of measurement.
3. The message **SELECT UNITS** will be displayed followed by the currently selected unit of measurement. Use the ▲ and ▼ keys to select either **U.S. Standard** or **METRIC** measurements. Press the **ENTER** key to advance to maximum workout time.
4. The message **SET MAX WORKOUT TIME** will be displayed followed by the currently selected maximum workout time. Use the ▲ and ▼ keys to select the maximum workout time. The maximum workout time may be set between 1 and 240 minutes or no limit. Press **ENTER** to advance to maximum pause time.
5. The message **SET MAX PAUSE TIME** will be displayed followed by the currently selected maximum pause time. Use the ▲ and ▼ keys to select the maximum pause time. The maximum pause time is the that will elapse after the pause key has been pressed until the unit resets. The maximum pause time may be set between 1 and 120 seconds. Press **ENTER** to exit the club settings program.

## 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 C556 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 C556.....WORK OUT SMARTER** banner scrolling, press **QUICK START**.
3. Select Resistance Level 1 and press **ENTER**.
4. 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.
5. If the EFX makes unusual noises or the electronic display does not change appropriately, troubleshoot per section 6.
6. Press the **RESISTANCE ▲** key until you reach Resistance Level 10. Operate the EFX for another 2–3 minutes.
7. If the EFX resistance does not change or the operation of the EFX feels inconsistent compared with Resistance Level 1, troubleshoot per section 6.
8. Press the **RESISTANCE ▲** key until you reach Resistance Level 20. Operate the EFX for another 2–3 minutes.
9. If the resistance of the C556 does not change or the EFX operation feels inconsistent with Resistance Levels 1 and 10, troubleshoot per Procedure 6.5.
10. Check the LED's mounted on the upper PCA and the function keys displayed on the electronic console by performing Procedure 3.2.
11. Turn off the EFX with the on/off switch, 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  $\Omega$ .
3. Disconnect the magnet wires. Measure the resistance between the two magnet wires.

### Note:

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

4. If the resistance measures significantly less than 90  $\Omega$  or significantly more than 110  $\Omega$ ..

#### THEN...

Replace the magnet as described in Procedure 7.13.

#### 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 - 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 7.26.
3. Remove both stairarms as described in Procedure 7.16.
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.

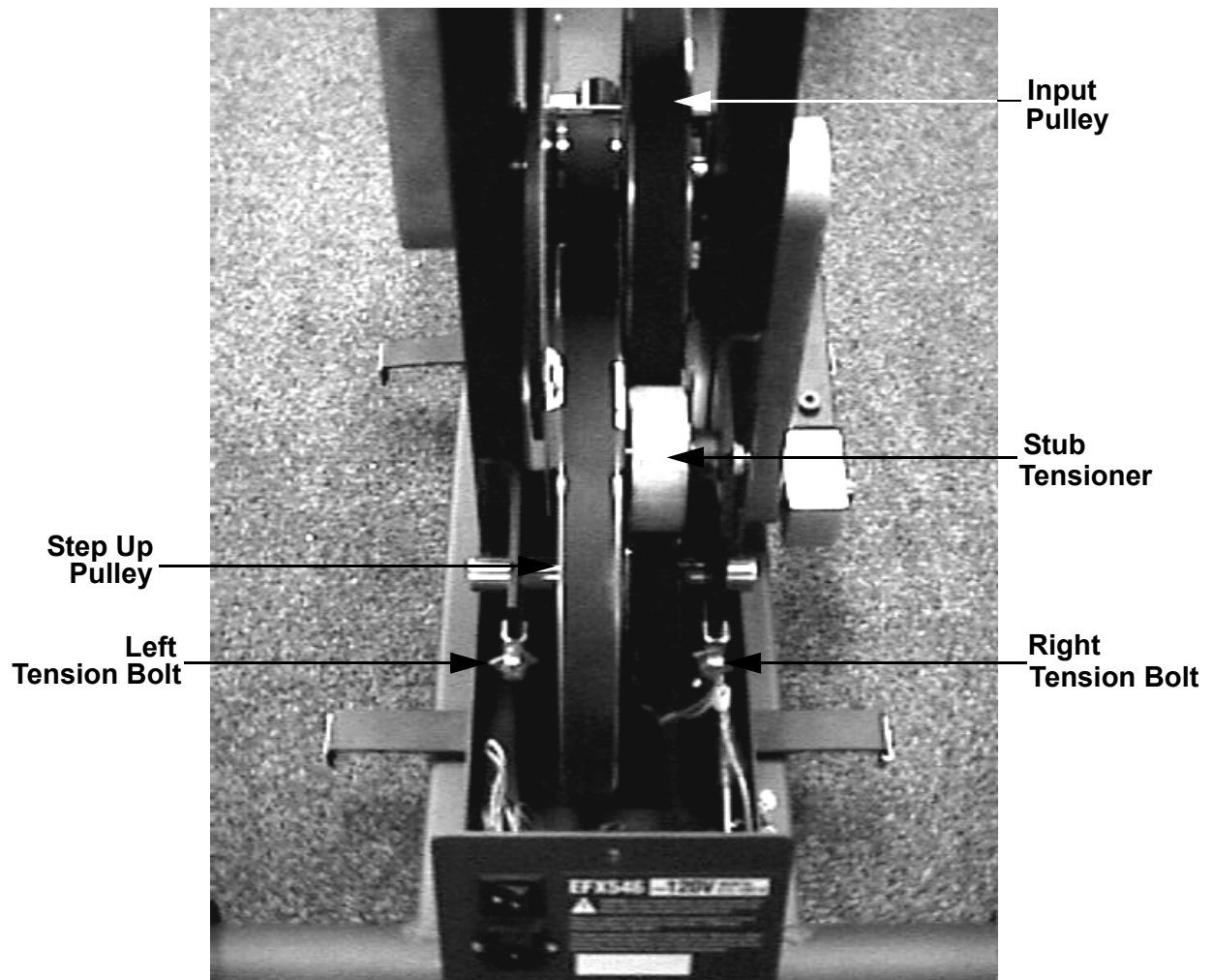
#### OTHERWISE...

Skip to step 13

6. Refer to Diagram 5.1 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 right adjustment bolt 1/4 of a turn was not sufficient, turn the left tension bolt 1/4 turn counterclockwise.
12. Repeat step 11, alternating between the right and left tension bolts until the alignment is correct.

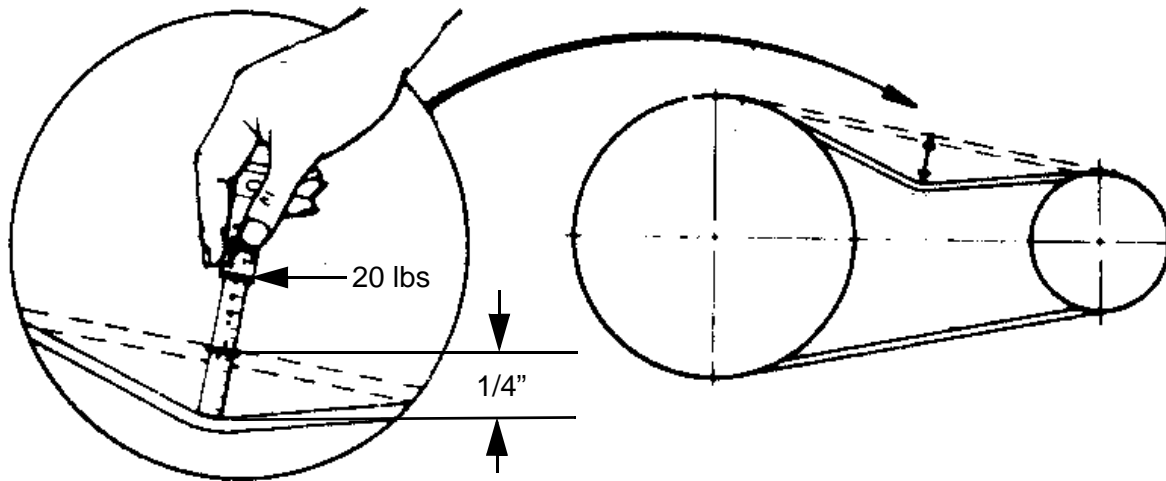
13. Belt tension must now be checked and if necessary corrected. Remember, if it is necessary to change the belt tension, the belt alignment must be maintained.

**Diagram 5.1 - 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 5.2). 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 19 and 21 pounds.
15. If the tension in step 13 is correct skip to step 18. Otherwise continue with the next step.

## Diagram 5.2 - 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 19 pounds

The belt tensioning gauge reads more than 21 pounds

### THEN...

Turn both tension bolts **clockwise**, in equal quarter-turn increments, until the belt tensioning gauge reads 19 - 21 pounds @ 1/4" deflection.

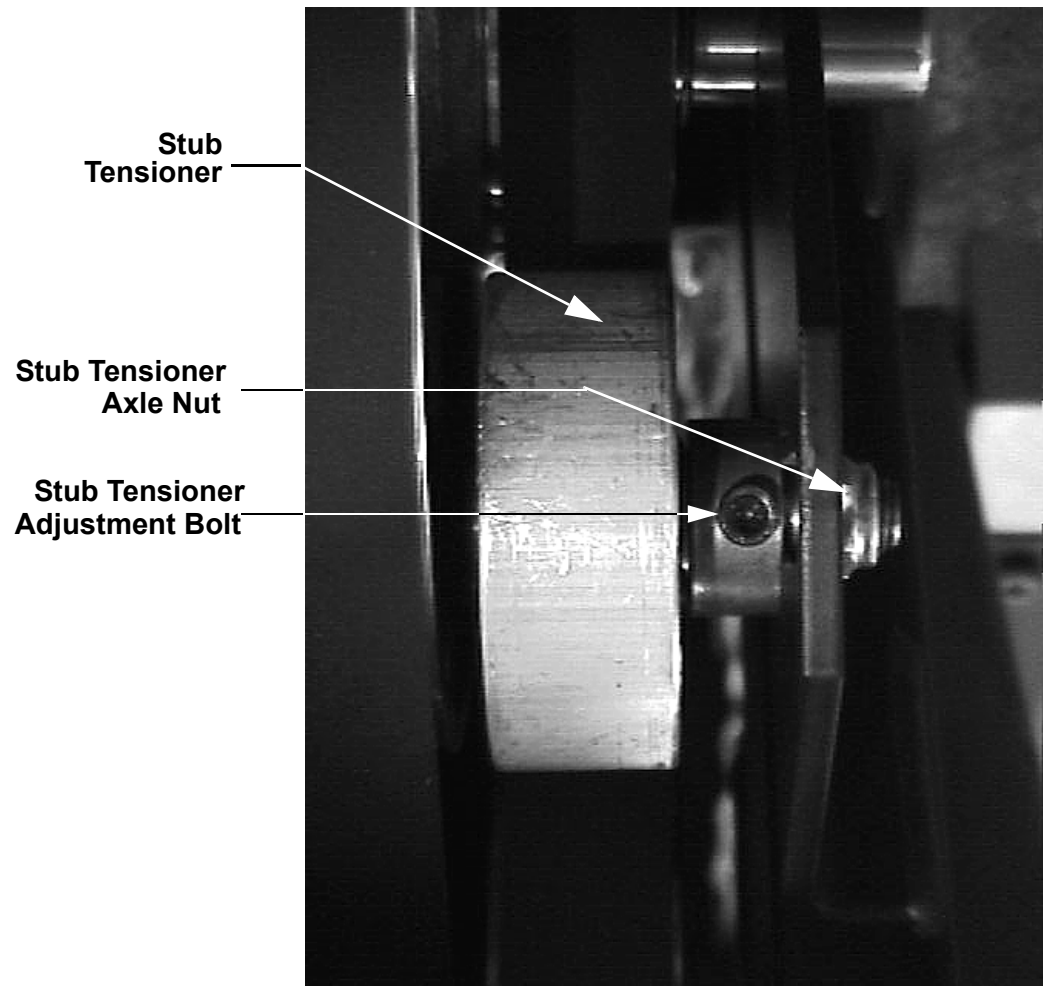
Turn both tension bolts **counterclockwise**, in equal quarter-turn increments, until the belt tensioning gauge reads 19 - 21 pounds @ 1/4" deflection.

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 5.3 - 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 7.16.
24. Check the operation of the unit as described in Section Four, then re-install the rear cover as described in Procedure 7.26

## 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

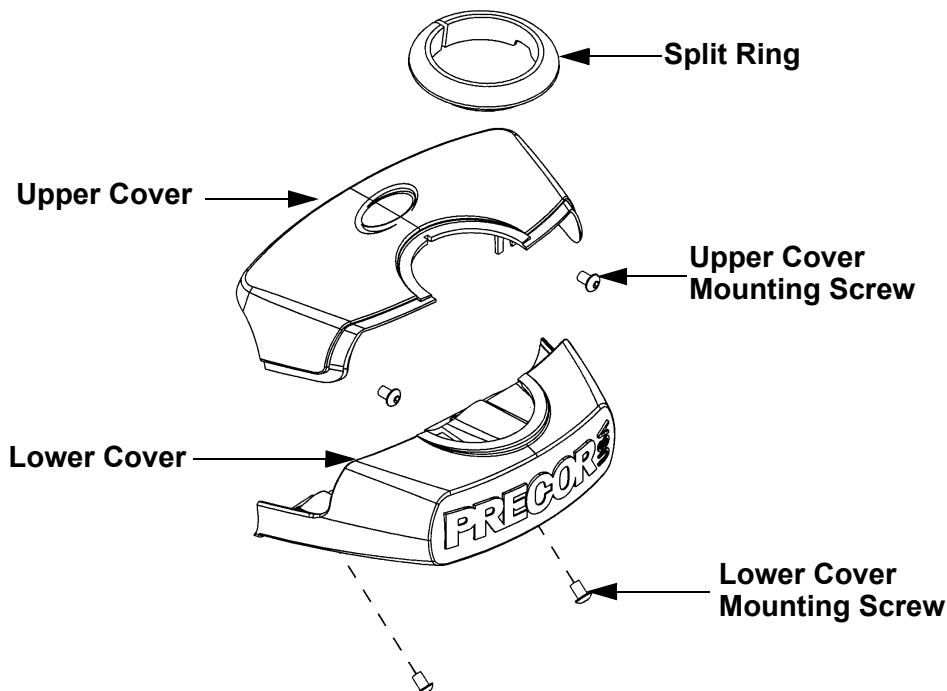
1. Set the on/off switch in the "off" position.

#### 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 two screws that fasten the upper mid-point cover. Remove two screws that fasten the lower mid-point cover. Remove both halves of the cover and the split gasket. See Diagram 6.1

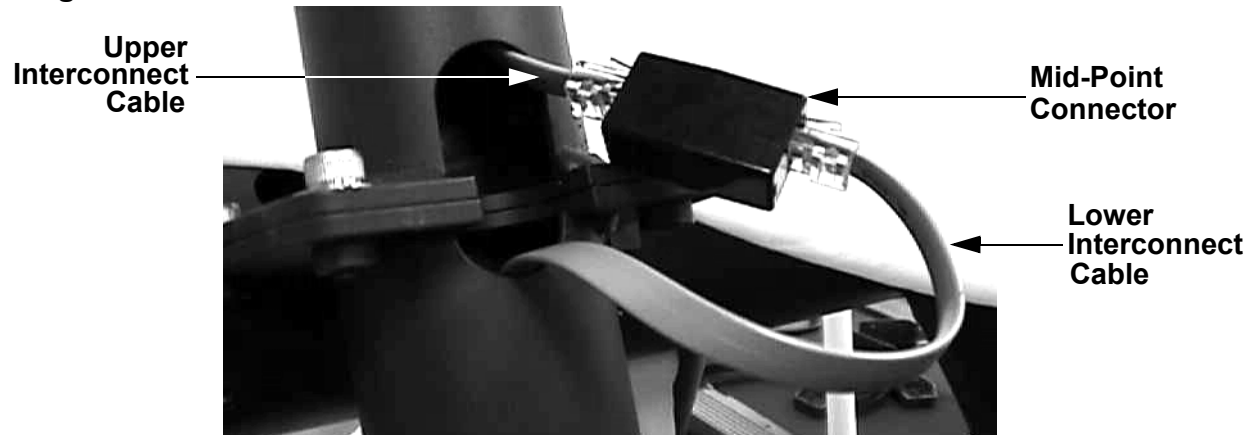
Diagram 6.1 - Mid-Point Cover



4. Remove the four screws from the rear of the upper display housing. Remove the display housing front panel from the display housing. Disconnect the upper interconnect cable from the upper PCA (connector J5).

5. Disconnect the upper interconnect cable from the mid-point connector. See Diagram 6.2

**Diagram 6.2 - Mid-Point Connector**



6. External of the upper column, connect a replacement upper interconnect cable to the mid-point connector and the upper PCA (connector J5).
7. Check operation as described in Section 4. If the unit works properly, replace the upper interconnect cable as described in Procedure 7.4.
8. If the symptoms are unchanged, remove the external upper interconnect cable. Reconnect the internal upper interconnect cable to the mid-point connector and the upper PCA. Set the display housing front panel in it's mounting position and fasten it with the four mounting screws removed in step 4. Troubleshoot the lower interconnect cable starting with step 9.

### **Troubleshooting the Lower Interconnect Cable**

9. Remove the rear cover as described in Procedure 7.1. Remove the shield from the lower PCA.
10. Disconnect the lower interconnect cable from the mid-point connector and the lower PCA (connector J5).
11. External of the frame, connect a replacement lower interconnect cable to the mid-point connector and the lower PCA.
12. Check operation as described in Section 4. If the unit works properly, replace the lower interconnect cable as described in Procedure 7.4.
13. If the symptoms are unchanged, remove the external lower interconnect cable. Reconnect the internal lower interconnect cable to the mid-point connector and the lower PCA. Remove the upper and lower interconnect cables from the mid-point connector. Connect a replacement mid-point connector between the two interconnect cables and retest the unit per Procedure 4.
14. Replace the lower PCA shield, rear cover (Procedure 7.1) and the main column cover (Procedure 7.27). If the unit still does function correctly, contact Precor Technical Support.

## 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. The keys on this unit are touch sensitive keys. It is necessary to use the keypad diagnostics to troubleshoot the key functions.

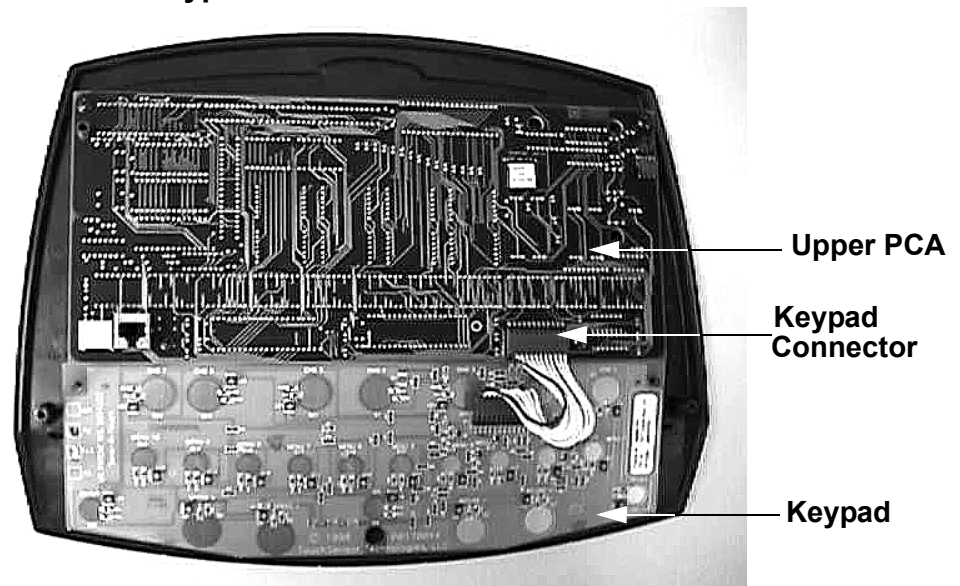
### Procedure

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.

2. Attach the anti-static wrist strap to your arm, then connect the ground lead of the wrist strap to the units frame.
3. If the EFX powers up and functions normally until a particular key(s) is pressed, skip to step 12.
4. If a “key depressed” message is immediately displayed when the EFX is powered up, continue with the next step.
5. This condition may be caused by either the keypad or upper PCA. Set the on/off switch in the “off” position.
6. Remove the four screws that fastens the display housing front panel to the display housing backing plate. These screws are located on the rear of the display housing backing plate.
7. Lift the display housing front panel off of the display housing backing plate. Remove the keypad connector from the upper PCA. See Diagram 6.3.

**Diagram 6.3 - Upper PCA & Keypad**

8. Set the on/off switch in the “on” position.
9. If a “key depressed” message is immediately displayed when the EFX is powered up, replace the upper PCA.
10. If a “key depressed” message is not displayed when the EFX is powered up, replace the display housing front panel. The display housing front panel is equipped with the keypad.
11. If you have performed all of the procedures above and have been unable to correct the problem, call Precor customer service.
12. Access the diagnostics program per procedure 3.2. If the key(s) necessary to access the diagnostic program is not functioning, skip to step 14.
13. Test the keypad per Procedure 3.2, step 4.
14. If all of the keys test good, the problem may be user error or a key function that is normally disabled during a particular user program.
15. If one or more keys do not function correctly, either the keypad (display housing) or upper PCA could be defective. Replace the display and repeat step 12. If the display housing did not correct the problem, re-install the original display housing and replace the upper PCA.
16. If you have performed all of the procedures above and have been unable to correct the problem, call Precor customer service.

## Procedure 6.3 - Upper Display does not illuminate

1. Set the on/off switch in the “off” position, unplug the line cord from the wall outlet.
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 F1 fuse from the lower PCA per Procedure 7.2, steps 1-5. (See Diagram 7.3)
4. Remove the fuses from the input power module. (See Diagram 7.4)
5. Check all three fuses with an ohmmeter. They should read approximately  $1\Omega$  or less. Replace any fuse that reads significantly high.
6. Replace the fuses in the power input module.
7. 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 infinity ((open).
8. If the reading is good skip to step 11, otherwise continue with the next step.
9. 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.
10. Check the line cord for nicked or cut wiring. Replace the line cord if necessary.
11. If you have performed all of the above tests and are unable to resolve the problem, contact Precor customer support.
12. Replace the F1 (1/4 amp) fuse in the lower PCA, perform the resistance measurement in step 6. The reading should be approximately 1.0 to 1.5 megohms.
13. Replace the F2 (2 amp) fuse in the lower PCA, perform the resistance measurement in step 6. The reading should be approximately 1.0 to 1.5 megohms.
14. If either of the readings in step 11 or 12 were significantly low, replace the lower PCA.
15. Plug the line cord into the wall outlet and set the on/off switch in the “on” position.
16. The red LED (D7) and the red LED (D2) should illuminate. Check between TP11 and TP14 on the lower PCA with a DC voltmeter. The reading should be approximately 5 Vdc.
17. 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 interconnect cable (J5) from the lower PCA.

18. 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 one of the interconnect cables or the upper PCA.
19. Substitute a known good upper PCA per Procedure 7.2. If the upper PCA does not correct the problem, troubleshoot the upper and lower interconnect cables per Procedure 6.1
20. If you have performed all of the above tests and are unable to resolve the problem, contact Precor customer support.

## Procedure 6.4 - 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 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 1 (red wire) and terminal 2 (green wire) on the speed sensor connector. Slowly rotate the flywheel 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 switches correctly correct, but the stride rate is still not displayed when the unit is operated, replace the lower PCA.



6. Repeat the measurement in step 5 at terminals 1 and 2 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, interconnect cables 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 6.5 - 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 29.5 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 $\Omega$  to 110 $\Omega$ . If the measurement is open ( $\infty$ ), 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 29.5 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 - Troubleshooting Hand Held Heart Rate

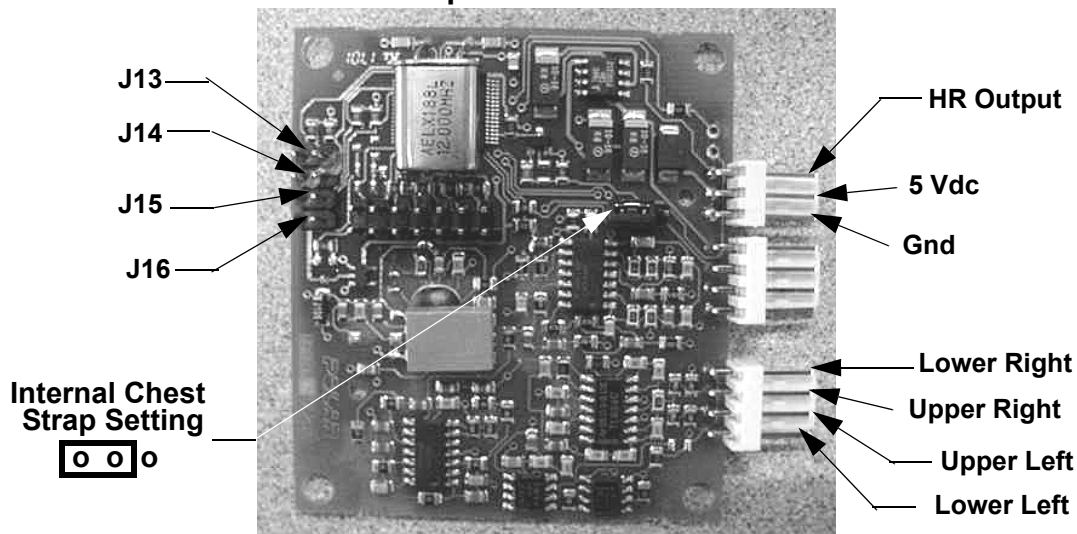
### Circuit Description

The hand held heart rate system is actually a dual system, that is, it can accept a heart rate signal from either the hand held heart rate contacts on the unit's handlebar or from a Polar heart rate chest strap transmitter. Refer to Diagram 6.4 and verify that no jumpers are equipped on J13, J14, J15 or J16. Also, verify that there is a jumper equipped on the internal chest strap setting. The internal chest strap setting is the two left hand pins on the three pin connector as shown below in Diagram 6.4. These settings allow the heart rate system to operate on the internal chest strap receiver with the chest strap heart rate priority. That is, if both a chest strap and hand heart rate signal is being received, the system will accept the chest strap signal and ignore the hand held signal. If a chest strap signal is not being received, the system will accept the hand held signal.

### Note:

There are four typical failure modes for the hand held/chest strap heart rate system. They are:  
 1 - hand held is normal - no chest strap reading; 2 - no hand held reading - chest strap normal;  
 3 - no hand held or chest strap reading; 4 - constant or intermittent readings when neither hand held or chest strap are in use.

### Diagram 6.4 - Hand held/chest strap heart rate PCA



### Normal hand held reading - No chest strap reading

1. Set the on/off switch in the "on" position and access the diagnostic program (Procedure 3.2). Advance to the heart rate display portion of the diagnostic program. Verify that a chest strap signal is not being accepted with either a Polar heart rate test transmitter or a known good chest strap transmitter. If this reading is good, skip to step 3.
2. Using a Polar heart rate test receiver, verify the operation of the chest strap transmitter furnished with the unit. If the Polar heart rate test receiver does not receive a signal, replace the chest strap transmitter.

3. Set the on/off switch in the "off" position and remove the display housing.
4. Verify the internal chest strap setting is set as shown in Diagram 6.4. Verify that a ferrite bead is installed on the heart rate PCA to upper PCA cable.
5. If the above procedures did not correct the problem, replace the heart rate PCA.

#### **No hand held reading - Normal chest strap reading**

6. Set the on/off switch in the "on" position and access the diagnostic program (Procedure 3.2). Advance to the heart rate display portion of the diagnostic program. Verify that a hand held signal is not being accepted by firmly grasping both the right and left hand held contacts on the handlebars. Cover as much of the contact surface area with your hands as possible (without moving your hands), you should receive a heart rate reading within ten seconds.
7. If a hand held signal is not being accepted, set the on/off switch in the off position.
8. Temporarily, install a spare jumper on J14 of the heart rate PCA (hand held priority). Set the on/off switch in the "on" position and repeat the procedure in step 6.
9. If the hand held signal is now being accepted, something in the near vicinity is radiating RF (radio frequency) energy that is being received by the chest strap portion of the heart rate PCA. Disabling the chest strap signal proves that it is radiated energy that is causing the problem.
10. If a hand held signal still not being accepted, skip to step 13.
11. The source of the radiated energy must be determined and relocated so that it no longer affects the heart rate PCA. Televisions, cell phones, Cardio-theatre receivers, etc. are possible sources of radiated energy.
12. Set the on/off switch in the "off" position, and remove the temporary jumper from J14 of the heart rate PCA. Re-locate all potential sources of radiation. Set the on/off switch in the "on" position and repeat the procedure in step 6.
13. Set the on/off switch in the "on" position and access the diagnostic program (Procedure 3.2). Advance to the heart rate display portion of the diagnostic program. Verify that a hand held signal is not being accepted by firmly grasping both the right and left hand held contacts with the opposite hands, right hand on the left handlebar contacts and left hand on the right handlebar contacts. Cover as much of the contact surface area with your hands as possible, you should receive a heart rate reading within ten seconds. If a hand held signal is still not being accepted, skip to step 15.
14. If a hand held signal was accepted in step 13, the hand held contact wiring is reversed. The end of the wire harness that connects to the hand held contacts in the handlebar is segregated into two groups. One group has blue shrink wrap around it and the other group has black shrink wrap around it. The "blue" group must go to the right hand contacts and the "black" group must go to the left hand contacts. In both groups the black wire must go to the lower contact and the red wire must go to the upper contact. If necessary, rewire the hand held contacts as described above and test as described in step 6.

15. Set the on/off switch in the "off" position. Refer to Diagram 6.4 for the following measurements. With an ohmmeter measure between the "lower right contact" pin on the J1 connector and the lower right hand held heart rate contact on the handlebar. The reading should be 1  $\Omega$  or less. Measure between the "upper right contact" pin on the J1 connector and the upper right hand held heart rate contact on the handlebar. The reading should be 1  $\Omega$  or less. Measure between the "upper left contact" pin on the J1 connector and the upper left hand held heart rate contact on the handlebar. The reading should be 1  $\Omega$  or less. Measure between the "lower left contact" pin on the J1 connector and the lower left hand held heart rate contact on the handlebar. The reading should be 1  $\Omega$  or less. If any of the above readings are greater than 1  $\Omega$ , replace the heart rate PCA to handlebar wire harness.

#### **No hand held reading - No chest strap reading**

16. Set the on/off switch in the "on" position and access the diagnostic program (Procedure 3.2). Advance to the heart rate display portion of the diagnostic program. Verify that neither a chest strap signal or a hand held signal is being accepted with either a heart rate test transmitter or a chest strap transmitter.
17. Check the plug/connector connections on both the heart rate PCA (J4), and upper PCA (J1).
18. If neither a chest strap signal or a hand held signal is being accepted, measure between the "ground" and "5 Vdc" pins on J4 for 5 Vdc. If 5 Vdc is present, replace the heart rate PCA.
19. If 5 Vdc is not present, remove the connector from J4 of the heart rate PCA. Measure between the "ground" and "5 Vdc" pins of the connector (just removed from the heart rate PCA) for 5 Vdc. If 5 Vdc is present, replace the heart rate PCA. If the 5 Vdc is not present, measure between the corresponding pins of J1 on the upper PCA (red and black wires). If 5 Vdc is not present replace the upper PCA. If 5 Vdc is present, replace the upper PCA to heart rate PCA cable.

#### **Constant or intermittent readings when neither the hand held or chest strap is in use**

20. Verify that a ferrite core is clamped around the heart rate PCA to upper PCA cable.
21. Constant or intermittent heart rate readings when neither heart rate system is in use is caused by something in the near vicinity radiating RF energy that is being received by the chest strap portion of the heart rate PCA.
22. Temporarily, install a spare jumper on J14 of the heart rate PCA (hand held priority). Set the on/off switch in the "on" position and repeat the procedure in step 6.
23. If the hand held signal is now being accept, something in the near vicinity is radiating RF energy that is being received by the chest strap portion of the heart rate PCA. Disabling the chest strap signal proves that it is radiated energy that is causing the problem.
24. The source of the radiated energy must be determined and relocated so that it no longer affects the heart rate PCA. Televisions, cell phones, Cardio-theatre receivers, etc. are possible sources of radiated energy.

25. Set the on/off switch in the “off” position, and remove the spare jumper from J14 of the heart rate PCA. Re-locate all potential sources of radiation. Set the on/off switch in the “on” position and repeat the procedure in step 6.

## Procedure 7.1 - Replacing the Mid-Point Cover

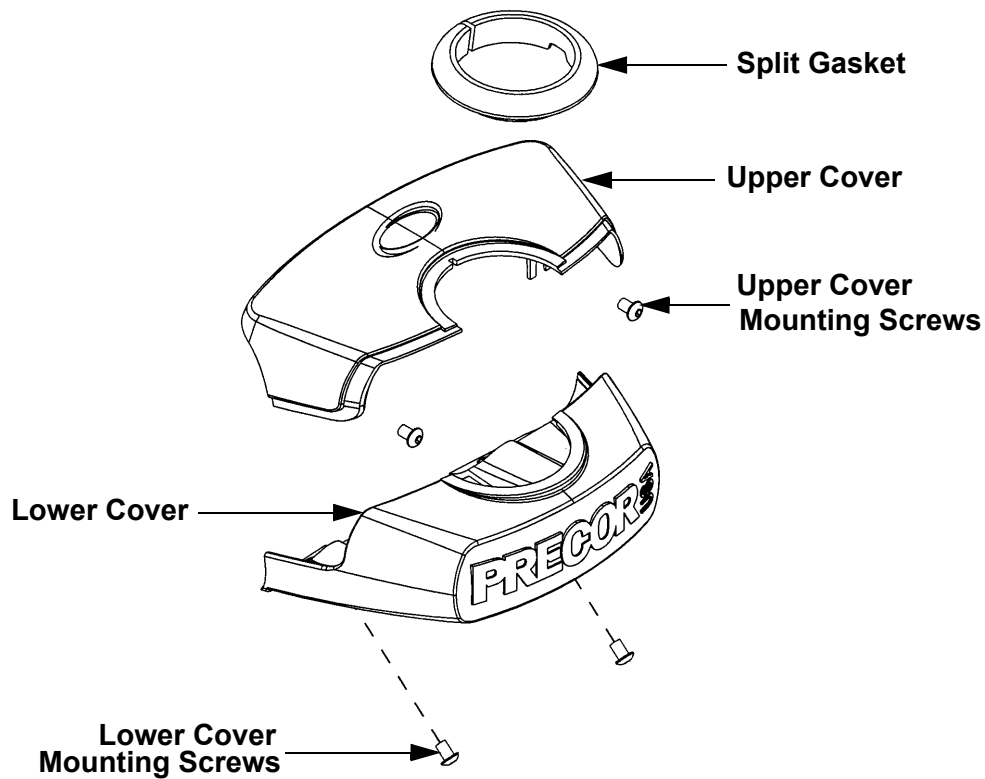
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

### WARNING

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

2. Remove two screws that fasten the upper mid-point cover. Remove two screws that fasten the lower mid-point cover. Remove both halves of the cover and the split gasket. See Diagram 7.1.

Diagram 7.1 - Mid Point Cover



3. Fit the two replacement cover halves and gasket at their mounting positions. Hand start the four mounting screws removed in step 2.
4. Hold the cover halves in place and tighten the four mounting screws.



## Procedure 7.2 - Replacing the Display Enclosure or Upper PCA

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

The keyboard is part of the display housing front panel. If the keyboard is not functioning properly, replace the display housing front panel.

### Removing the Display Housing Front Panel

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.

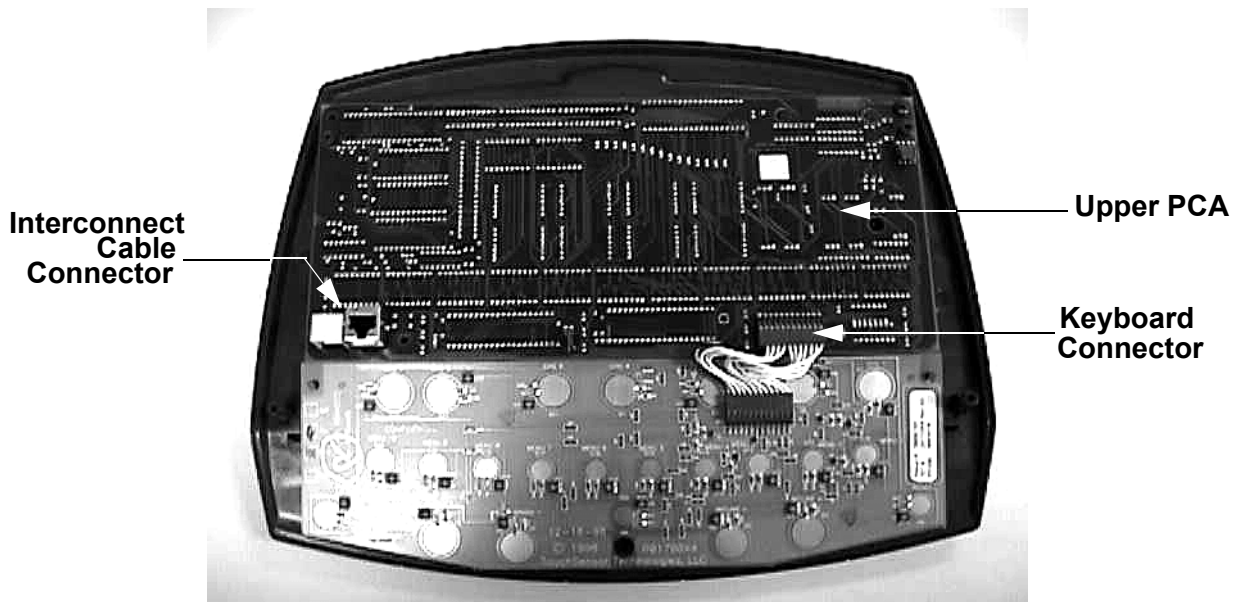
2. Attach the anti-static wrist strap to your arm, then connect the ground lead of the wrist strap to the units frame.
3. Remove the four screws that secure the display housing front panel to the display backing plate.
4. Attach the wrist strap to your arm, then connect the ground lead of the wrist strap to the EFX frame.
5. Disconnect the upper interconnect cable from the upper PCA (connector J5).

### Removing and Replacing the Upper PCA

6. Carefully disconnect the keyboard cable from the upper PCA (connector J2).
7. Remove the four screws that secure the upper PCA to the display housing front panel.

#### **Note:**

Package the upper PCA in an anti-static bag and document the problem as described in Procedure 3.6, Documenting Software Problems.

**Diagram 7.2 - Display Housing Front Panel, Rear View**

8. Position the upper PCA at its mounting location on the display housing front panel (refer to Diagram 7.2). Replace and tighten the upper PCA mounting screws.
9. Reconnect the keyboard cable to the upper PCA.
10. Reconnect the upper interconnect cable to the upper PCA.
11. Remove the ground lead of the wrist strap from the EFX frame, then remove the wrist strap from your arm.
12. Position the display enclosure on the display plate. Replace and tighten the display mounting screws.
13. Check operation as described in Section Four.

## Procedure 7.3 - Replacing the Lower PCA

### Removing the Lower PCA

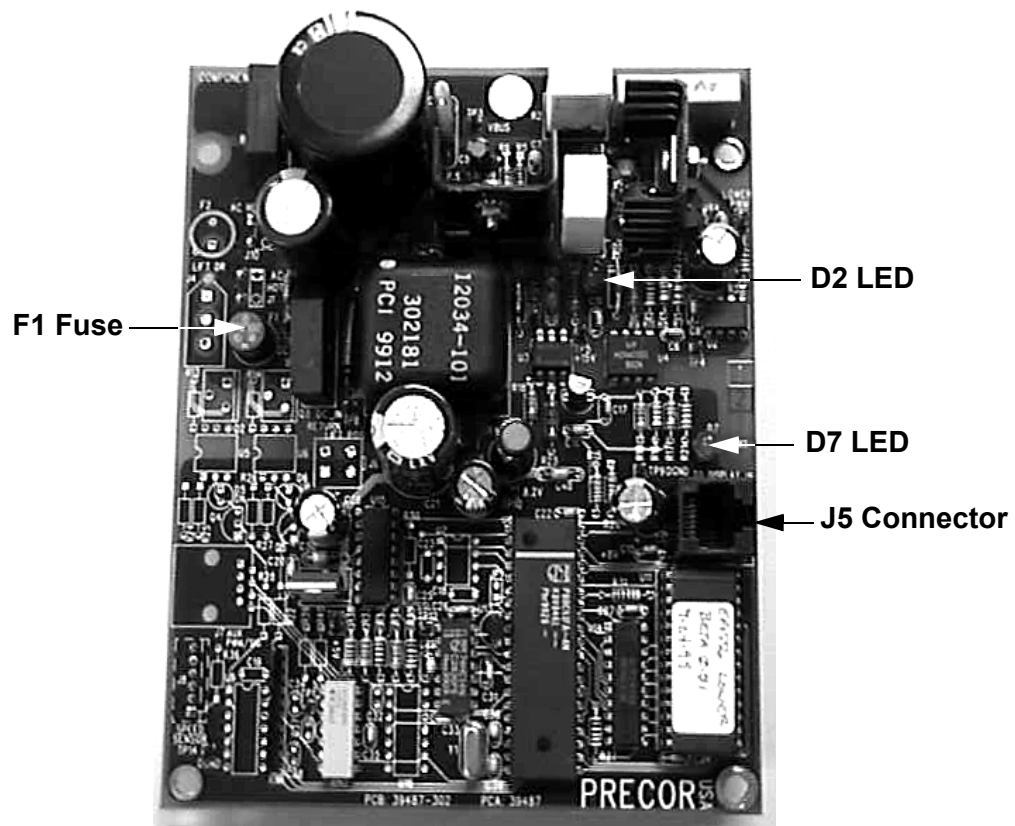
1. Set the on/off switch in the "off" position.

#### 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.
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 7.3 - 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, then check the operation of the C556 as described in Section Four.

## Procedure 7.4 - Replacing the Upper and/or Lower Interconnect Cables

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

### Procedure

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 wrist strap to your arm, then connect the ground lead of the wrist strap to the EFX frame.
3. If you are replacing the lower interconnect cable, skip to step 12.

### Replacing the Upper Interconnect Cable

4. Remove the display housing per Procedure 7.2, steps 2 to 6.
5. The upper and lower interconnect cables are connected at the mid-point of the main column. Remove the mid-point column cover per Procedure 7.1.
6. Disconnect the upper interconnect cable from the mid-point connector. See Diagram 6.2. Tape the end of the replacement interconnect cable with the to the upper end of the old interconnect cable (display housing end).
7. Carefully pull the old interconnect cable out of the mid-point access hole while feeding the new interconnect cable into the unit. When the new cable is fully into the unit, remove the tape and discard the old interconnect cable. Connect the upper interconnect cable to the mid-point connector and push them into the access hole.
8. Connect the upper interconnect cable to the upper PCA. Replace the display housing per Procedure 7.2, steps 7 to 12.
9. Remove the ground lead of the wrist strap from the EFX frame, then remove the wrist strap from your arm.
10. Check the operation of the EFX as described in Section Four.

## Replacing the Lower Interconnect Cable

11. Remove the rear cover. Remove the shield from the lower PCA. Disconnect the interconnect cable from the lower PCA (connector J5). See Diagram 7.3.
12. The upper and lower interconnect cables are connected at the mid-point of the main column. Remove the mid-point column cover per Procedure 7.1.
13. Disconnect the lower interconnect cable from the mid-point connector. See Diagram 6.2. Tape the replacement interconnect cable to the old interconnect cable at the lower PCA end of the old interconnect cable.
14. Carefully pull the old interconnect cable out of the mid-point access hole while feeding the new interconnect cable into the unit. When the new cable is fully into the unit, remove the tape and discard the old interconnect cable. Connect the lower interconnect cable to the mid-point connector and push them into the access hole.
15. Connect the new interconnect cable to the lower PCA.
16. Replace the shield on the lower PCA. Replace the rear cover.
17. Check the operation of the EFX as described in Section Four.

## Procedure 7.5 - Replacing the Power Entry Module (Units manufactured before 10-16-2000)

### 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 7.4)

### Diagram 7.4 - Fuse Drawer, Power Entry Module



3. Remove the fuses from the fuse drawer and test them with an ohmmeter. Both fuses should read approximately  $1\Omega$  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 two screws from the bottom of the EFX frame that secure the power entry module mounting bracket to the frame. Swing the power entry module mounting bracket away from the frame to gain access to the power entry module wiring.
5. Remove the wires from the power entry module, a brown and blue wire, a brown and blue jumper. Remove the ground wire (green) from the ground stud.

6. 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 power entry module mounting bracket.

### **Replacing the Power Entry Module**

7. 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 power entry module mounting bracket.
8. Refer to Wiring Diagram 8.1 for 120V units or Wiring Diagram 8.3 for 240V units and reconnect the wiring removed in step 4.
9. Fasten the power entry module mounting bracket to the EFX frame with the screws removed in step 4.
10. 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.
11. Check the operation of the EFX as described in Section Four.



## Procedure 7.6 - 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.
3. Remove two screws from the bottom of the EFX frame that secure the power entry module mounting bracket to the frame. Swing the power entry module mounting bracket away from the frame to gain access to the line filter wiring.
4. Remove two blue wires and two brown wires from the line filter. Disconnect the ground wire (green) from the ground stud.
5. Remove the screws that secure the line filter. Remove the filter from its mounting position.

### Replacing the Line Filter

6. Position the new line filter on the rear assembly bracket. Install the screws that mount the line filter to the rear assembly bracket.
7. Refer to Wiring Diagram 8.1 for 120V units or Wiring Diagram 8.3 for 240V units and reconnect the wiring removed in step 4.
8. Fasten the power entry module mounting bracket to the EFX frame with the screws removed in step 3.
9. Re-install the rear cover, then check the operation of the EFX as described in Section Four.

## Procedure 7.7 - 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.
3. Remove two screws from the bottom of the EFX frame that secure the power entry module mounting bracket to the frame. Swing the power entry module mounting bracket away from the frame to gain access to the on/off switch wiring.
4. Disconnect the two brown and two blue wires from the on/off switch.
5. Depress the mounting tabs that secure the switch to its mounting bracket. Remove the switch from its mounting position.

### Replacing the ON/OFF Switch

6. 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.
7. 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 4.
8. Fasten the power entry module mounting bracket to the EFX frame with the screws removed in step 3.
9. Re-install the rear cover, then check the operation of the EFX as described in Section Four.

## Procedure 7.8 - 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.

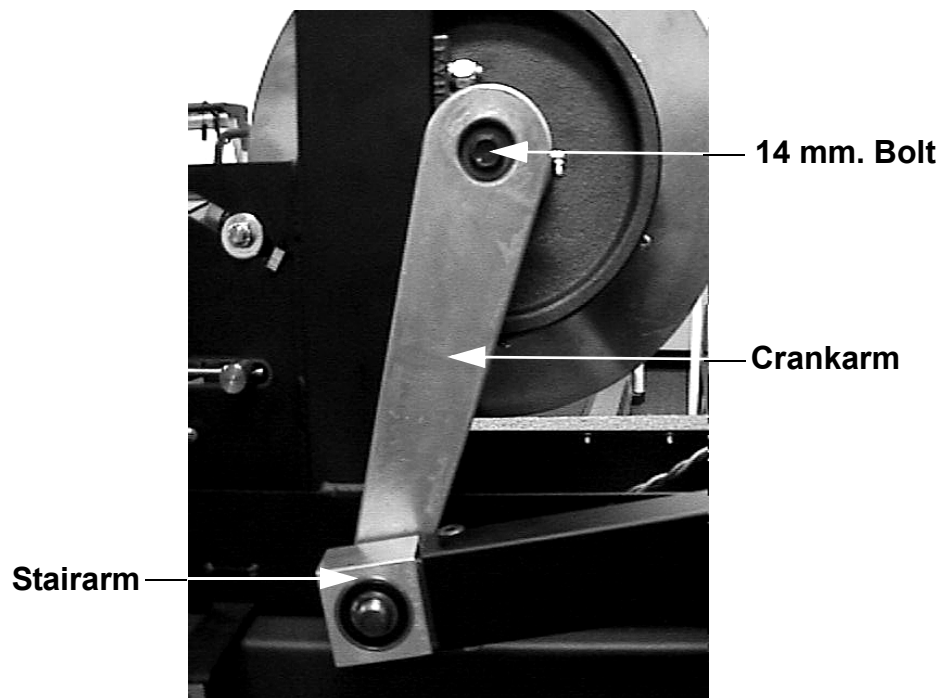
2. Remove the rear cover.
3. Remove the stairarm assembly as described in Procedure 7.16.

#### **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 7.5 - 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 7.16.
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.

## Procedure 7.9 - 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.
3. Remove the stairarm assemblies as described in Procedure 7.17.
4. Remove the crankarm assemblies as described in Procedure 7.8.
5. Remove the magnet assembly as described in Procedure 7.14.
6. Remove the input drive assembly per Procedure 7.11, steps 6-9.
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. 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 input pulley belt. Set the replacement input pulley belt in it's 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. Complete the installation per Procedure 7.11, steps 10-17.

## Procedure 7.9 - 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.
3. Remove the stairarm assemblies as described in Procedure 7.17.
4. Remove the crankarm assemblies as described in Procedure 7.8.
5. Remove the magnet assembly as described in Procedure 7.14.
6. Remove the input drive assembly per Procedure 7.11, steps 6-9.
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. 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. Set the replacement step up pulley belt in it's 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. Complete the installation per Procedure 7.11, steps 10-17.

## Procedure 7.11 - Replacing the Input Drive Assembly

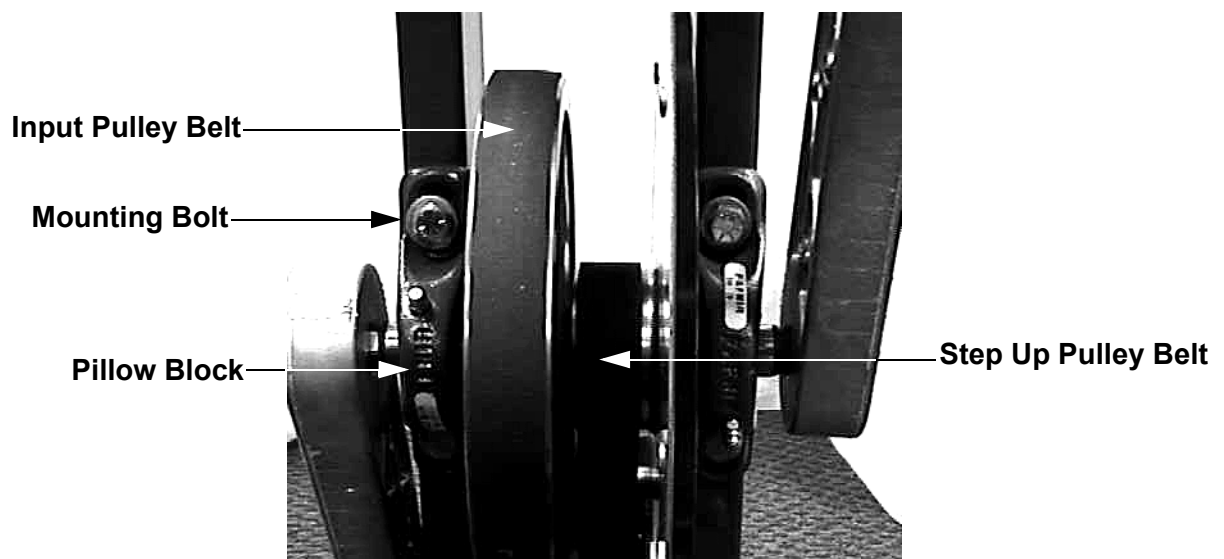
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

### WARNING

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

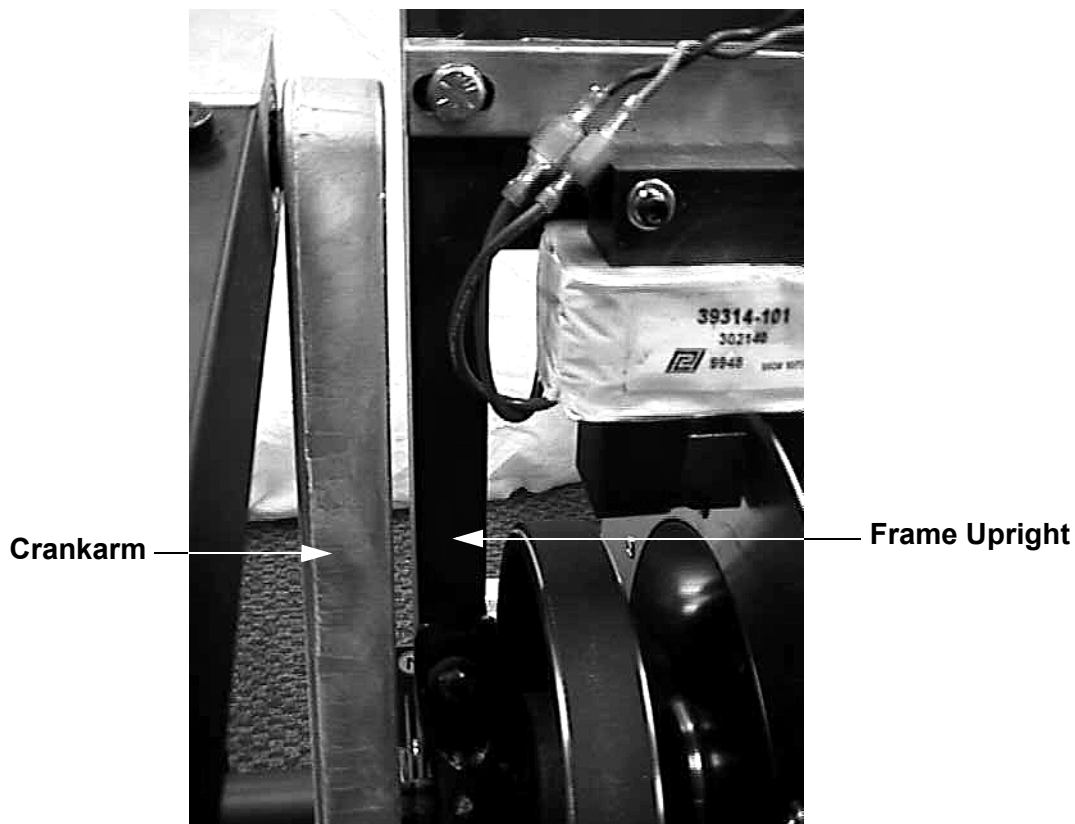
2. Remove the rear cover.
3. Remove the stairarm assemblies as described in Procedure 7.17.
4. Remove the crankarm assemblies as described in Procedure 7.8.
5. Remove the magnet assembly as described in Procedure 7.14.
6. Remove tension from the input pulley and step-up pulley belts as described below:
  - a. Loosen the stub tensioner axle nut and turn the stub tensioner adjustment nut counterclockwise until tension is removed from the input belt. (See Diagram 5.3)
  - 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 5.2)
  - c. Slide the input and step up belts off of their pulleys.
7. Remove the stub tensioner per procedure 7.20, steps 4 and 5.
8. Remove the input drive assembly mounting bolts (2 per pillow block bearing).

### Diagram 7.6 - Input Drive Assembly



9. Remove the input drive assembly. Slide both belts off of the ends of the input drive assembly.
10. Hold the replacement input drive assembly at its mounting position and slide the input belt over and past the pillow block bearing on the left side of the input drive assembly. Slide the step belt over and beyond the pillow block bearing on the right side of the input drive assembly.
11. Replace the bolts in one of the pillow block bearings and torque both bolts to 500 inch pounds. Using a mallet or dead blow hammer, tap the other pillow block bearing until the edge of the pillow block bearing is parallel with the edge of the frame upright. Replace the bolts in the other pillow block bearing and torque to 500 in pounds.

### Diagram 7.7 - Drive Unit Alignment



12. Place the input belt and step up belt in place on their pulleys. Tighten both belts enough so that they don't slip and are roughly aligned. The tensioning and alignment of the belts will be completed in a later step.
13. Replace the magnet assembly per procedure 7.13.
14. Complete the installation, drive belt alignment and tensioning per Procedure 5.3.



15. Replace the crankarms per Procedure 7.7. The crankarms must be parallel to the frame uprights. See Diagram 7.6. If necessary loosen the four drive unit mounting bolts, align the drive unit and torque the drive unit mounting bolts to 500 inch pounds.
16. If the drive units was moved in step 15, re-check the drive belt alignment and tensioning per Procedure 5.3.
17. Replace the cover.

## Procedure 7.12 - 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.
3. Remove the stairarm assemblies as described in Procedure 7.17.
4. Remove the crankarm assemblies as described in Procedure 7.8.
5. Remove the magnet assembly as described in Procedure 7.14.
6. Remove tension from the drive belts and remove the input drive assembly per Procedure 7.11, steps 6 to 9.
7. Slide the step up and input belts off of their pulleys and remove the input drive assembly from the drive unit. (See Diagram 7.6)
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 assembly.
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. Mount the input drive assembly and complete this procedure per Procedure 7.11, steps 10-14.

## Procedure 7.13 - 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.

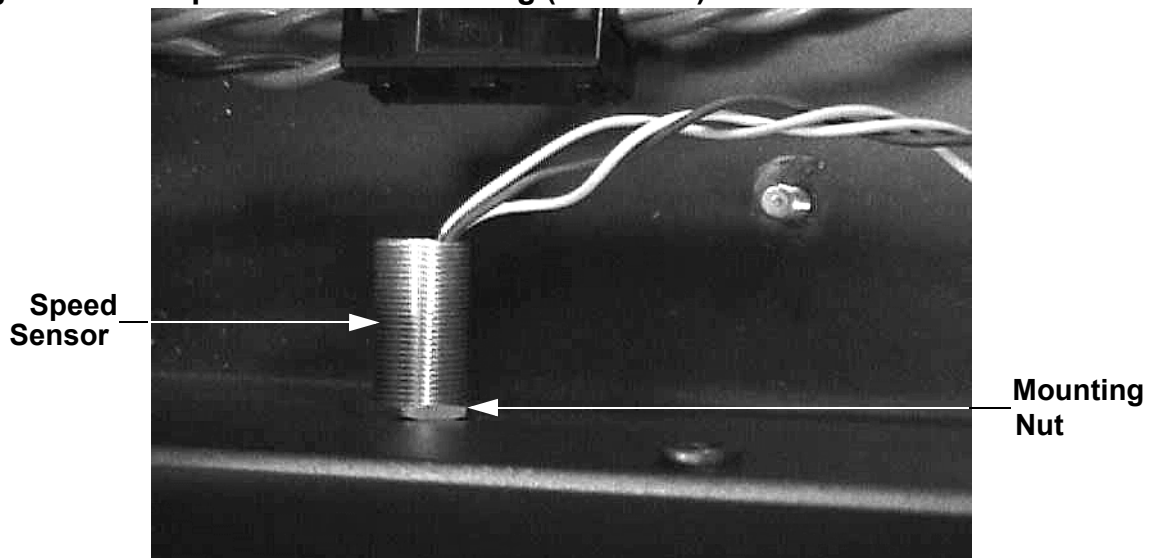
#### **WARNING**

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

**Note:** The speed sensor magnet must be mounted in the right hand crankarm on version 1 units and in the left hand crankarm of version 2 units. The speed sensor magnet must be mounted in the correct crankarm or speed sensor will not function.

2. For version 1 units continue with step 3. For version 2 units skip to step 10.
3. Remove the rear cover.
4. Disconnect the speed sensor cable from the lower PCA. See Diagram 7.8A.

#### **Diagram 7.8A - Speed Sensor Mounting (version 1)**



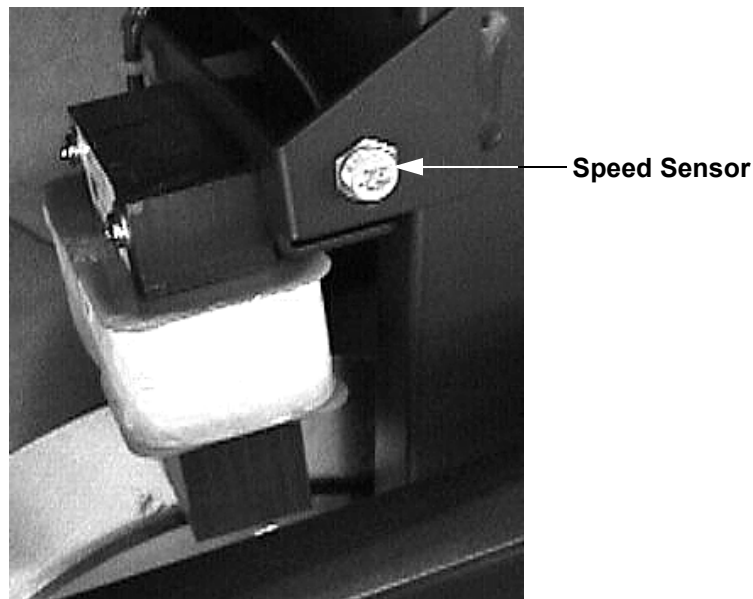
5. Remove the mounting nut that secures the speed sensor assembly to the frame. Thread the speed sensor out of the frame.

### Replacing the Speed Sensor Assembly

6. Thread the replacement speed sensor into the frame as far as possible. Rotate the crankarm until the magnet in the crankarm is next to the speed sensor. Thread the speed sensor out of frame, as required, to set the distance between the speed sensor and the magnet to 1/4 inch.

7. Replace mounting nut that secures the speed sensor to the frame.
8. Reconnect the speed sensor cable to the lower PCA.
9. Re-install the rear cover, then check the operation of the C546 as described in Section Four.
10. Remove the left rear cover.
11. Disconnect the speed sensor cable from the lower PCA.

### **Diagram 7.8B - Speed Sensor Mounting (version 2)**



12. Remove the mounting nut that secures the speed sensor assembly to the frame. Thread the speed sensor out of the frame.

### **Replacing the Speed Sensor Assembly**

13. Thread the replacement speed sensor into the frame as far as possible. Rotate the crankarm until the magnet in the crankarm is next to the speed sensor. Thread the speed sensor out of frame, as required, to set the distance between the speed sensor and the magnet to 1/4 inch.
14. Replace mounting nut that secures the speed sensor to the frame.
15. Reconnect the speed sensor cable to the lower PCA.
16. Re-install the left rear cover, then check the operation of the C546 as described in Section Four.

## Procedure 7.14 - Replacing the Eddy Current Magnet Assembly

### Removing the Magnet Assembly

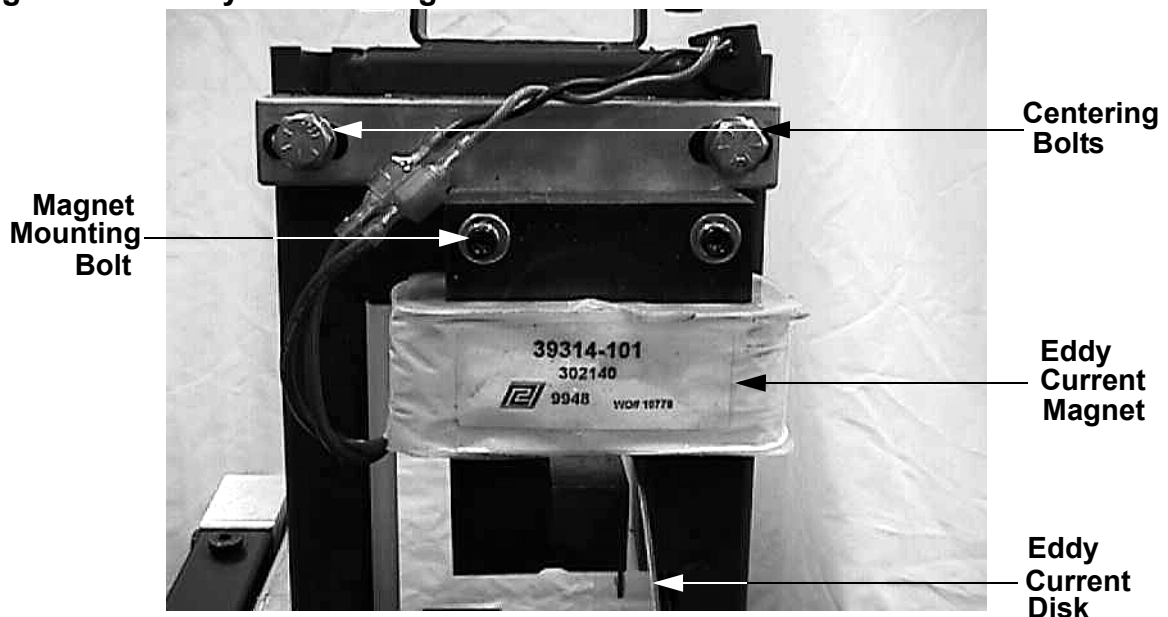
1. Set the on/off switch in the "off" position, then unplug the power cord from the wall outlet.

#### 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.
3. Disconnect the magnet cable from the magnet assembly.
4. Remove the bolts that secure the magnet assembly to the drive unit. Remove the magnet from the drive unit.

### Diagram 7.9 - Eddy Current Magnet



### Replacing the Magnet Assembly

5. Position the magnet assembly at its mounting position.
6. Replace and hand tighten the magnet assembly mounting bolts. Torque the magnet assembly mounting bolts to 60 in/lbs.

7. Check that the eddy current disk is centered between the “legs” of the eddy current magnet. If not, loosen the centering bolts, see Diagram 7.9, and center the eddy current magnet on the eddy current disk. Torque the centering bolts to 150 inch pounds.
8. Reconnect the magnet cable to the magnet assembly.
9. Re-install the rear cover, then check the operation of the EFX as described in Section Four.

## Procedure 7.15 - Replacing a Wheel Assembly

### Procedure

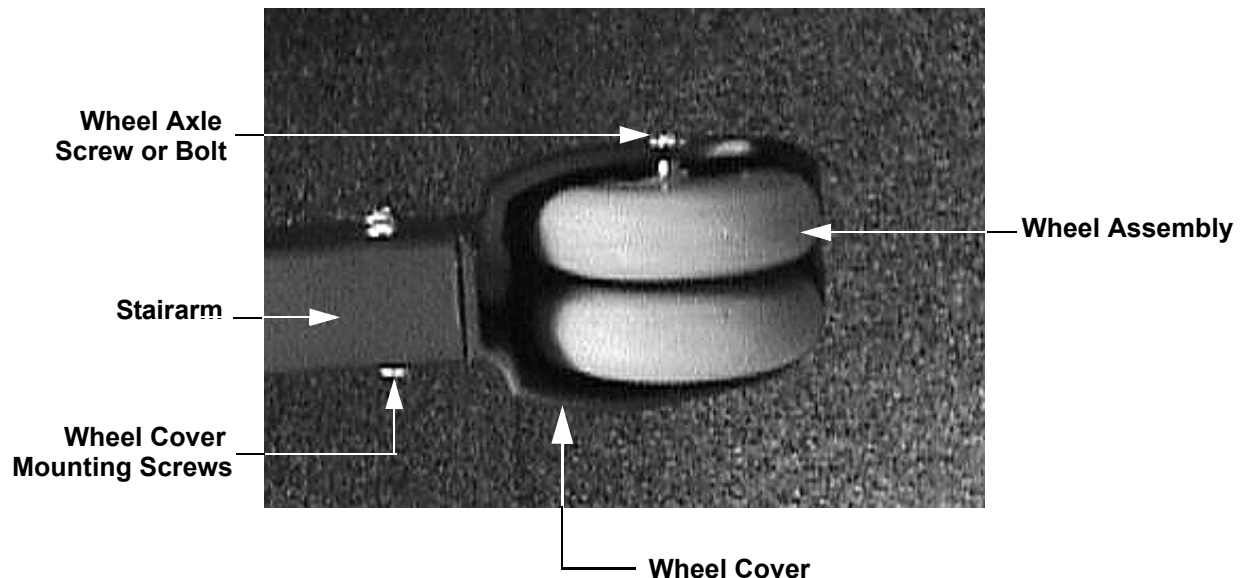
1. Set the on/off switch in the "off" position, then unplug the power cord from the wall outlet.
2. On February 2, 2004 the wheel assembly was modified to a wheel assembly utilizing larger bearings and a larger mounting bolts. If the wheel being replaced has large (5/16-18) mounting bolts, skip to step 8. If the wheel being replaced has a small (8-32) mounting screw, continue with step 3.

### WARNING

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

3. Because the replacement wheels are improved, both the right and left wheel should be replaced. Additionally, two new wheel covers (43702-504) will be required accommodate larger wheel mounting bolts.
4. The wheel assembly is provided as an assembly that includes both wheels and replacement wheel axle screws. Remove the four wheel cover mounting screws, wheel cover from the stairarm and discard the wheel and cover.
5. Mount the replacement wheel cover on the stairarm with the screws removed in step 4.

### Diagram 7.10 - Wheel Assembly



6. Install the replacement wheel assembly in the wheel cover. Install and hand tighten the two wheel axle bolts. Torque the wheel cover bolts to 15 foot-pounds.

7. Plug the power cord into the wall outlet, set the on/off switch in the “on” position and thoroughly test the operation of the wheel assemblies.
8. Remove the two wheel axle bolts from the wheel. Discard the bolts and the wheel. Replacement wheel mounting bolts are furnished with the replacement wheel.
9. Install the replacement wheel assembly in the wheel cover. Install and hand tighten the two wheel axle bolts. Torque the wheel cover bolts to 15 foot-pounds.
10. Plug the power cord into the wall outlet, set the on/off switch in the “on” position and thoroughly test the operation of the wheel assemblies



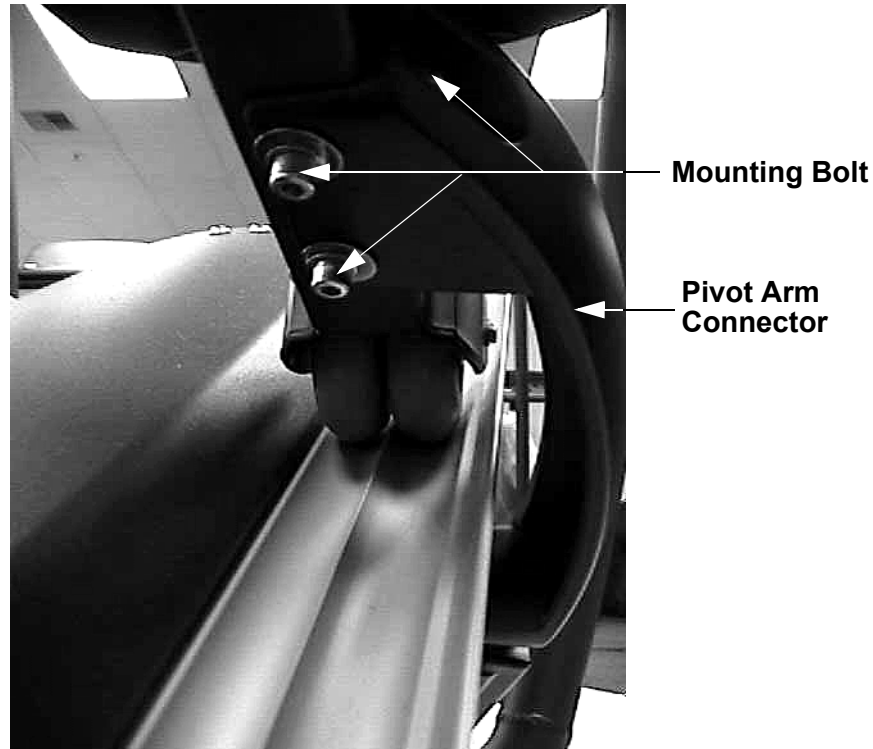
## **Procedure 7.16 - Replacing a Stairarm Pedal**

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.

## Procedure 7.17 - 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 three bolts that fasten the pivot arm connector to the stairarm. See Diagram 7.11.

**Diagram 7.11 - Pivot Arm Connector**



3. Remove the rear cover.
4. Remove the retaining clip that fastens the stairarm onto the crankarm. Slide the stairarm off of the crankarm.
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 6. Torque the stairarm pedal mounting bolts to 60 in/lbs.
9. Remove the four screws that fasten the wheel assembly to the stairarm. Remove the wheel assembly from the stairarm.

10. Install the wheel assembly on the replacement stairarm. Install and hand tighten the four the four screws removed in step 9. Torque the screws to 70 inch pounds.
11. Slide the replacement stairarm onto the crankarm. Replace the retaining clip removed in step 4.
12. Set the pivot arm connector at it's mounting position on the stairarm. Replace and torque the three pivot arm connector bolts to 125 inch pounds.
13. Replace the rear cover.

## Procedure 7.18 - Replacing a Ramp Assembly

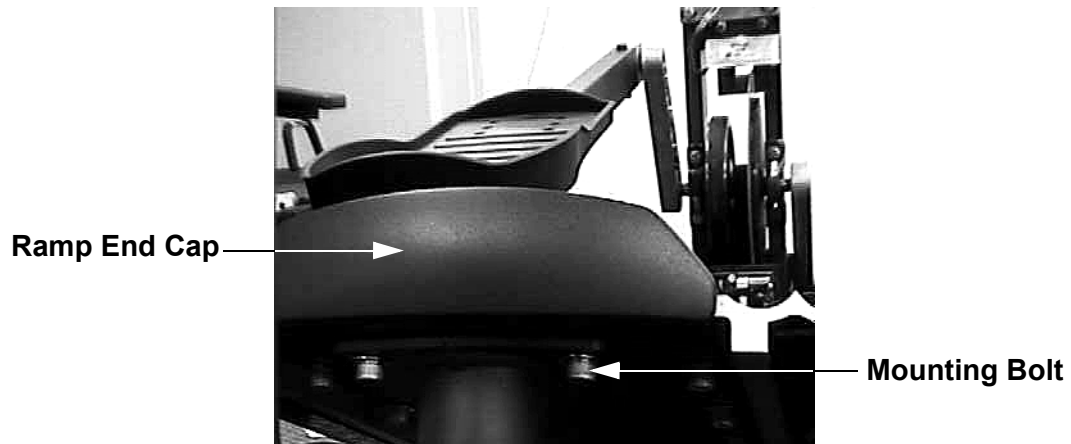
### Procedure

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.
2. Remove the three bolts that fasten each pivot arm connector to the stairarm. See Diagram 7.9.
3. Remove the rear cover and rotate both stairarms to the rear of the unit.
4. Remove the four screws that fasten the ramp end cap to the ramp assembly See Diagram 7.13. Slide the ramp end cap out of the ramp assembly and rotate the ramp assembly toward the rear of the unit.
5. Remove six rear ramp mounting bolts (3 each side).

### Diagram 7.12 - Rear Ramp Mounting



6. Remove the two mounting bolts from the front bottom of the ramp assembly.

**Diagram 7.13 - Front Ramp Mounting**

7. Remove the ramp from the EFX.
8. Slide the ramp end cap into the ramp assembly. Fasten the ramp end cap with the screws removed in step 4.
9. Set the ramp assembly at its mounting position. Hand start the six rear mounting bolts and the two front bottom mounting bolts. Torque the six rear mounting bolts to 120 inch pounds. Torque the two front bottom mounting bolts to 100 inch pounds.
10. Rotate both stairarms forward onto the ramp assembly.
11. Set the pivot arm connectors at their mounting positions on the stairarms. Replace and torque the six pivot arm connector bolts to 135 inch pounds.
12. Replace the rear cover.

## Procedure 7.19 - Replacing a Handlebar

1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.
2. Remove the four screws that fasten the handlebar to the upper pivot arm.

### Diagram 7.14 - Handlebar Mounting



3. Set the replacement handlebar in its mounting position. Hand start the four mounting screws. Center the handlebar in the indented area of the upper pivot arm. Torque the four mounting screws to 300 inch pounds.

## Procedure 7.20 - Replacing the Stub Tensioner

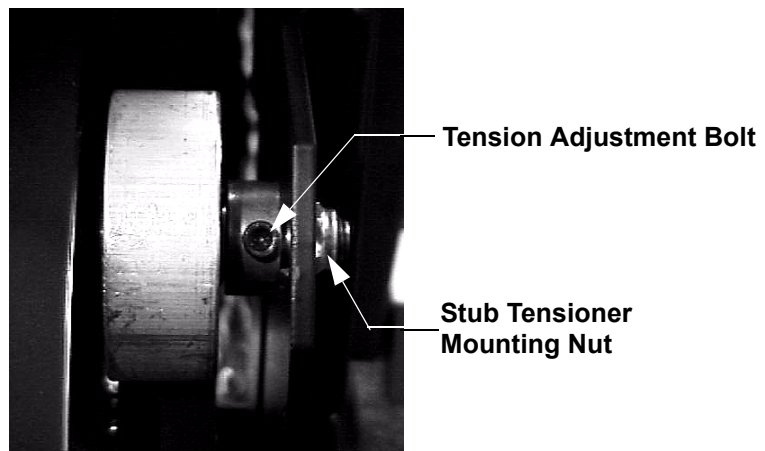
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

### **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.
3. Loosen the tension adjustment bolt to remove tension from the input belt. See Diagram 7.15.

### **Diagram 7.15 - Stub Tensioner Mounting**



4. Remove the stub tensioner mounting nut and remove the stub tensioner from the drive unit.
5. Loosely mount the replacement stub tensioner in it's mounting position.
6. Complete the installation, drive belt alignment and tensioning per Procedure 5.3.

## Procedure 7.21 - Replacing a Pivot Arm Connector

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 three bolts that fasten the pivot arm connector to the stairarm. See Diagram 7.9.
3. Remove the retaining ring that fastens the lower pivot arm to the pivot arm connector.

### **Diagram 7.16 - Pivot Arm Connector**



4. Remove the pivot arm connector. Remove the wave washer from the pivot arm connector.
5. Place the wave washer from step 5 on the replacement pivot arm connector. Slide the pivot arm connector into the lower pivot arm and replace the retaining ring.
6. Hand start the three bolts that fasten the pivot arm connector to the stairarm. Torque the three pivot arm connector bolts to 125 inch pounds.



## Procedure 7.22 - Replacing a Lower Pivot Arm

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 retaining ring that fastens the lower pivot arm to the pivot arm connector. See Diagram 7.16.
3. Remove the bolt that fastens the lower pivot arm to the upper pivot arm.

### **Diagram 7.17 - Pivot Arms**



4. Remove the lower pivot arm.
5. Slide the lower pivot arm onto the pivot arm connector. Replace the retaining ring removed in step 2.
6. Align the lower pivot arm with the upper pivot arm and replace the bolt removed in step 3. Torque the bolt to 200 inch pounds.

## Procedure 7.23 - Replacing an Upper Pivot Arm or Bearings

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.

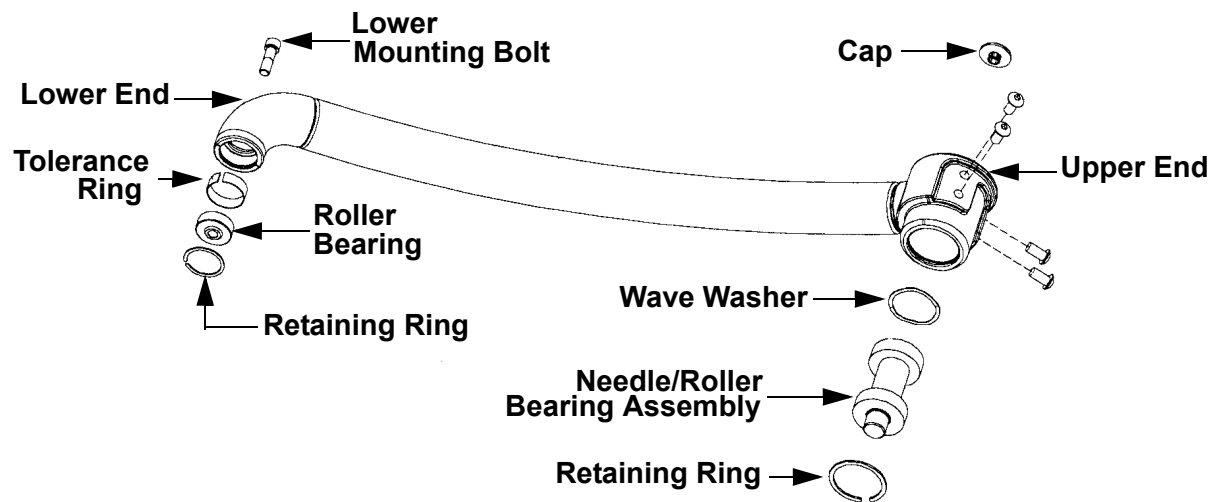
2. Remove the bolt that fastens the upper pivot arm to the lower pivot arm. See Diagram 7.17.
3. Remove the cap from the upper end of the upper pivot arm. Remove the bearing shaft from the upper end of the upper pivot arm. The bearing shaft will be very tight, a long handled socket wrench with a 7/16” hex key will be necessary for removal. See Diagram 7.18.

### Diagram 7.18 - Upper Pivot Arm



4. Remove the upper pivot arm from the unit.
5. Remove the retaining ring from the lower end of the upper pivot arm. Remove the roller bearing from the lower end of the upper pivot arm. See Diagram 7.19.

### Diagram 7.19 - Upper Pivot Arm Components



6. The bearing in the lower end of the upper pivot arm is replaceable. The bearings in the upper end of the upper pivot arm are not field replaceable. If the bearings in the upper end of the upper pivot arm are defective, replace the entire upper pivot arm.
7. If you are replacing the bearing in the lower end of the upper pivot arm, substitute the new part during the assembly process.
8. Slide the roller bearing into the lower end of the upper pivot arm. Insert the retaining ring into the lower end of the upper pivot arm.
9. Align the lower end of the upper pivot arm with the lower pivot arm, hand start the bolt that fastens the upper pivot arm to the lower pivot arm.
10. Set the upper end of the upper pivot arm in its mounting position and carefully thread the bearing shaft into the frame. Care must be taken to avoid cross-threading the bearing shaft.
11. Torque the lower mounting bolt to 200 inch pounds. Torque the bearing shaft to 150 foot pounds (1800 inch pounds).
12. Insert the cap into the upper end of the upper pivot arm.

## Procedure 7.24 - Replacing the Upper Main Column

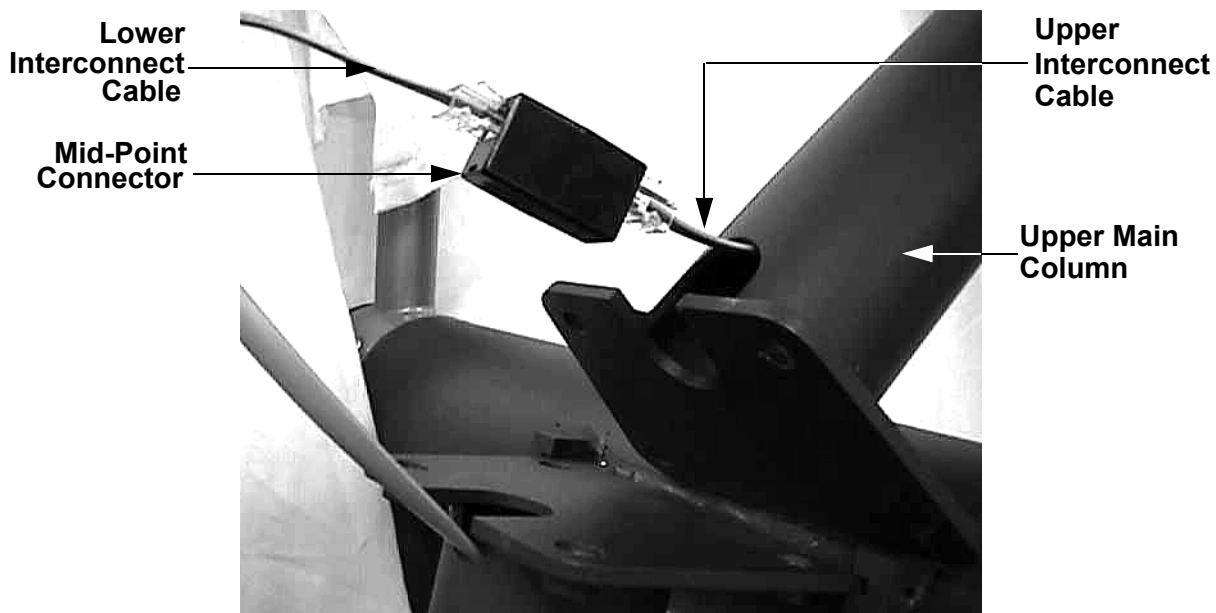
1. Set the on/off switch in the “off” position, then unplug the power cord from the wall outlet.

### WARNING

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

2. Remove the mid-point cover per 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. Carefully reach into the access hole in the lower front of the upper main column and extract the interconnect cables.
5. Disconnect the upper interconnect cable from the mid-point connector. See Diagram 7.20.

### Diagram 7.20 - Upper Main Column Mounting



6. Remove the four bolts that fasten the upper main column to the frame. Remove the upper main column.
7. Remove the four screws that fasten the display housing backing plate to the upper main column. Remove the display housing from the upper main column and carefully draw the upper interconnect cable out of the upper main column.
8. Feed the upper interconnect cable into the replacement upper main column and fasten the display housing to the replacement upper main column with the screws removed in step 7.

9. Draw the upper interconnect cable out of the access hole at the bottom of the upper main column as shown in Diagram 7.20.
10. Set the upper main column at its mounting position, hand start the four mounting bolts removed in step 5. Torque the mounting bolts to 100 inch pounds.
11. Connect the upper interconnect cable to the mid-point connector. Carefully push the interconnect cables into the upper main column access hole.
12. Replace the mid-point cover per Procedure 7.25.
13. Remove the two covers halves and the gasket.
14. Fit the two replacement cover halves and gasket at their mounting positions. Hand start the four mounting screws removed in step 2.
15. Hold the cover halves in place and tighten the four mounting screws.

## Procedure 7.25 - Replace the Rear Cover

1. For version 1 units continue with step 2. For version 2 units skip to step 9.
2. 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.

3. There are two mounting screws on each side and one mounting screw in the front and rear of the rear cover. Remove these six mounting screws.
4. Remove the two screws from the cover badge on the top of the cover. See Diagram 7.21.

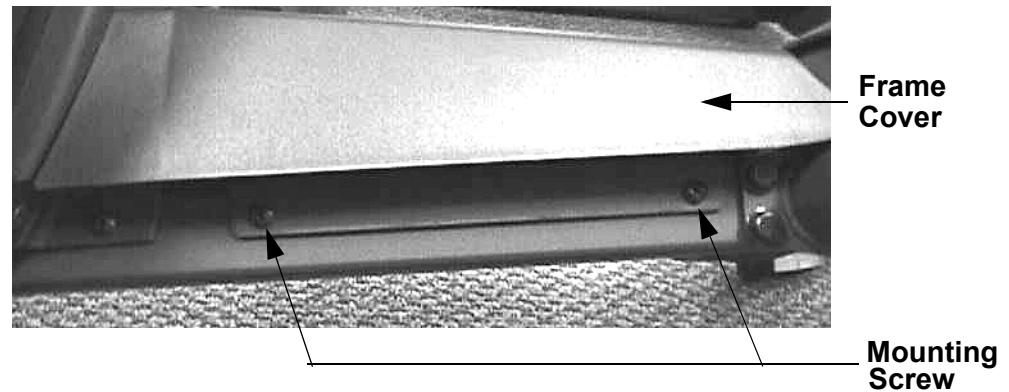
### Diagram 7.21 - Rear Cover Badge



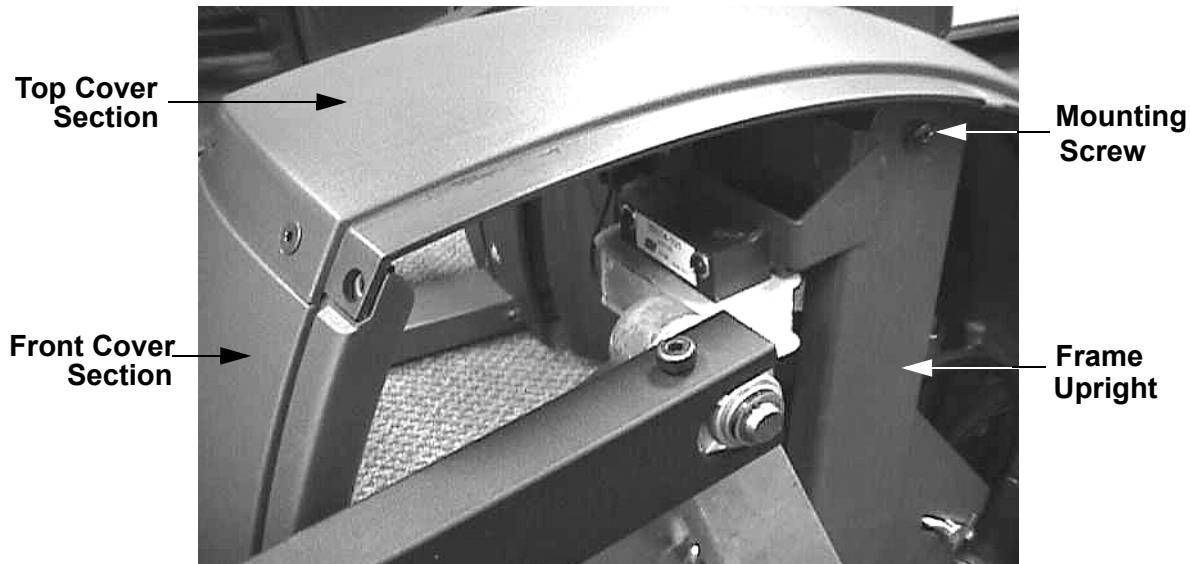
5. Remove the cover from the unit.
6. Set the replacement at its mounting position. The cover should be on the outside of all of the cover's mounting tabs.
7. Hand start all eight mounting screws from steps 2 and 3.
8. Tighten the eight mounting screws.

9. Set the on/off switch in the “off” position, then unplug the power cord from the A.C. outlet.
10. The rear cover is a four piece cover; front, top, left and right sections. If the front cover section is being removed, the frame cover must also be removed (See Diagram 7.22).
11. If you are removing either the right or left cover section, it is only necessary to remove the four screws that fasten the cover section.

#### Diagram 7.22 - Frame Cover



12. If you are replacing either the front or top cover section, you must first remove the left and right cover sections and then remove the cover section being replaced.
13. If you are removing the top cover (See Diagram 7.23), remove the two phillip screws that fasten the top cover section to the frame upright. Remove three screws that fasten the top cover section to the rear cover support. Remove two screws that fasten the top cover section to the front cover section.
14. If you are removing the front cover section, the right, left and top cover sections must be removed first. Remove the four screws that fasten the frame cover to the frame (See Diagram 7.1). Remove two phillips screws that fasten the bottom of the front cover section to the frame. Lift the rear portion of the frame cover and carefully remove the front cover section. If it is necessary to remove the frame cover, lift the rear of the frame cover, slide the frame cover out of the ramp and remove the frame cover.

**Diagram 7.23 - Top Cover Section (with right & left cover sections removed)**

15. If all four cover sections have been removed, first replace the frame cover and front cover section, then the top cover section and then the left and right cover sections as described below.
16. Slide the tongue of the frame cover into the ramp. Lift the rear of the frame cover and fit the front cover against the frame cover. Slide the front and frame covers into place as a unit. Replace and tighten the four phillips screws that fasten the frame cover to the frame. Replace and tighten the two phillips screws that fasten the front cover section to the frame.
17. Set the top cover section in it's mounting position, replace and tighten the two phillips screws that fasten the top cover section to the frame upright. See Diagram 7.23. Replace and tighten the three screws that fasten the top cover section to the rear cover support. Replace and tighten the two screws that fasten the top cover section to the front cover section.
18. Set the left cover section in it's mounting position, replace and tighten the four screws that fasten the left cover section to the front cover section, top cover section and rear cover support.
19. Set the right cover section in it's mounting position, replace and tighten the four screws that fasten the right cover section to the front cover section, top cover section and rear cover support.



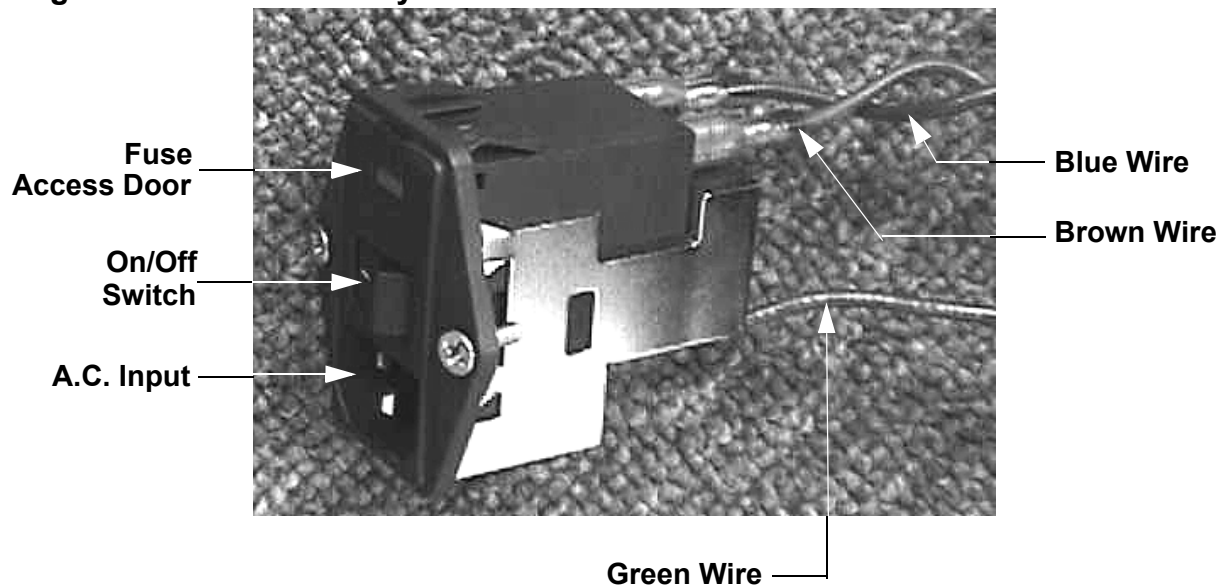
## Procedure 7.26 - Replacing a Power Entry Module (Units manufactured after 10-15-2000)

### 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 7.24 - 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  $1\Omega$  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.

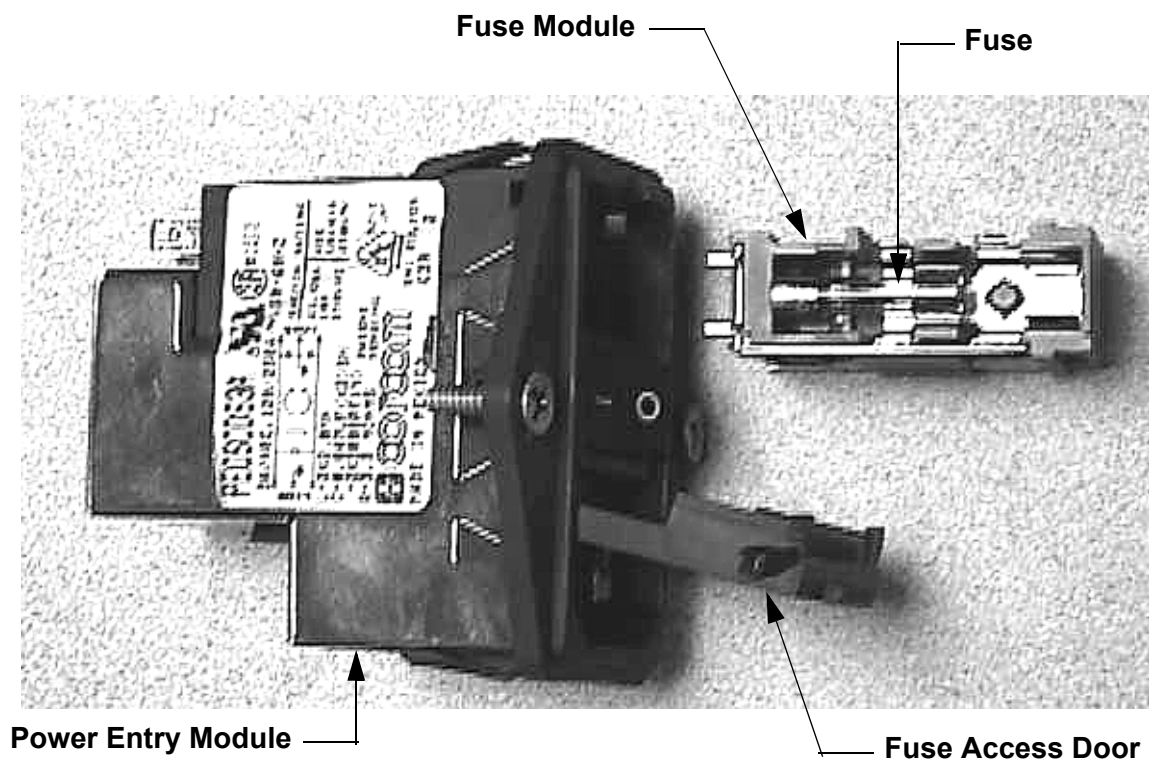
8. Replace the wires removed in step 3. Connect the blue wire to terminal D and the brown wire to terminal A of the power entry module.
9. Replace the cover per Procedure 7.1.
10. Insert the A.C. line cord in the power entry module and the A.C. outlet.
11. Set the on/off switch in the on position and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

## Procedure 7.27 - Replacing a Power Entry Module Fuse

### 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 7.25).

### Diagram 7.25 - Power Entry Module Fuse



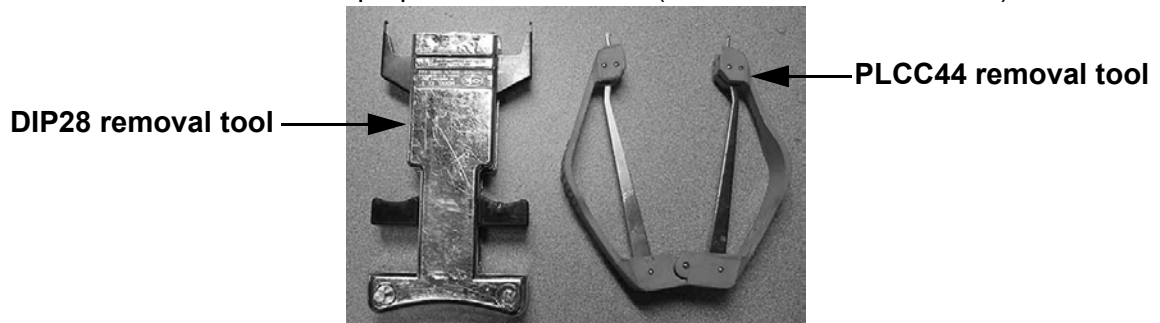
3. Using the thin bladed screwdriver, carefully pry the fuse module out of the power entry module.
4. The fuse module contains two fuses, carefully pry one or both fuses out of the fuse module, as required.
5. Snap the replacement fuse(s) into the fuse module.
6. Slide the fuse module back into the power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

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

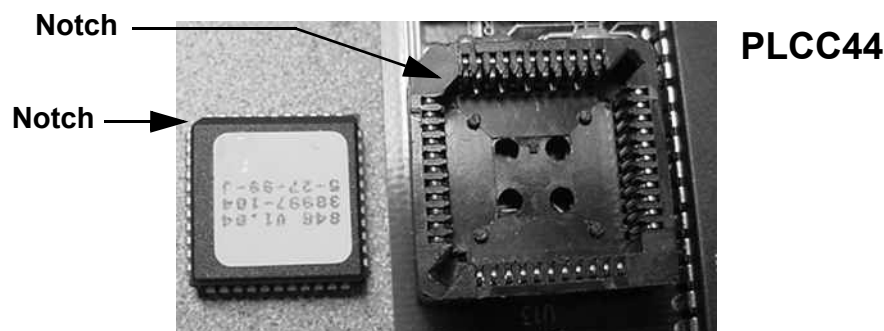
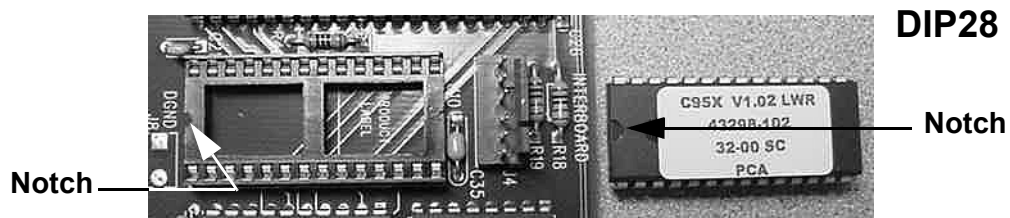
## Procedure 7.28- Replacing the PROM

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

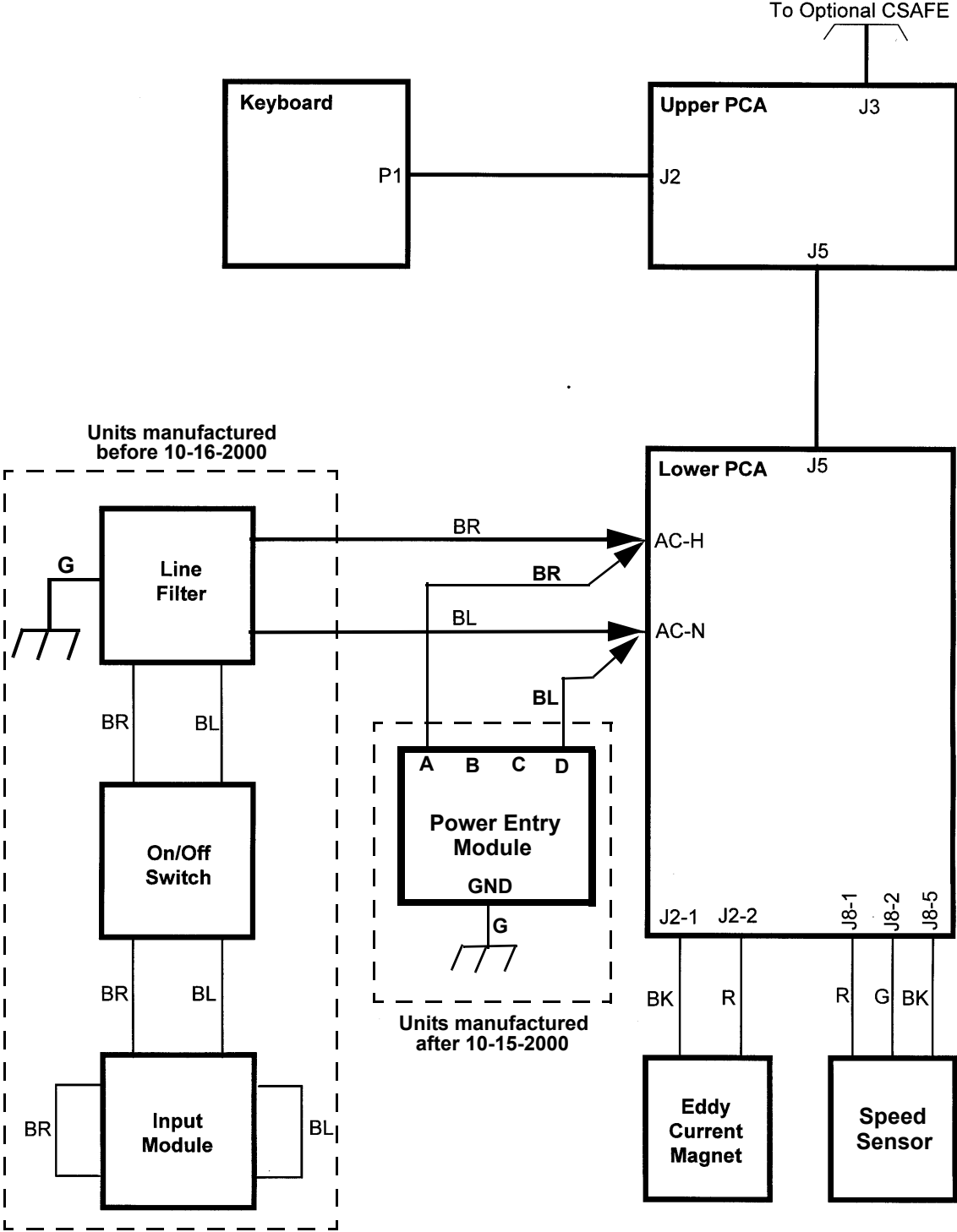
1. The PROM and the associated printed circuit assembly (PCA) are static sensitive. Anti-static devices must be used and all anti-static precautions must be followed during this procedure.
2. Remove the printed circuit assembly per its associated procedure.
3. Currently we are using two styles of IC 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.



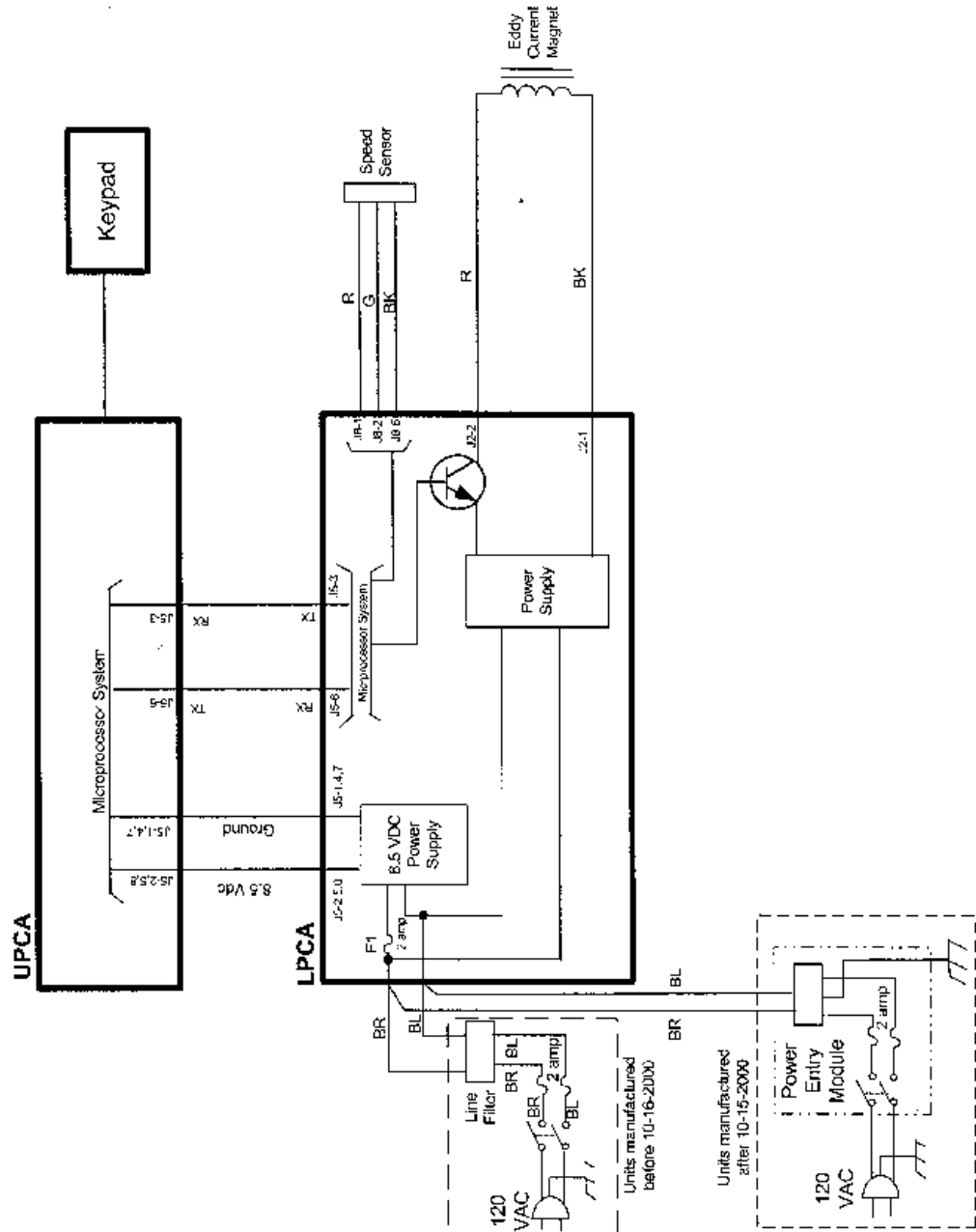
# Wiring Diagram 8.1 - C556 120 Vac



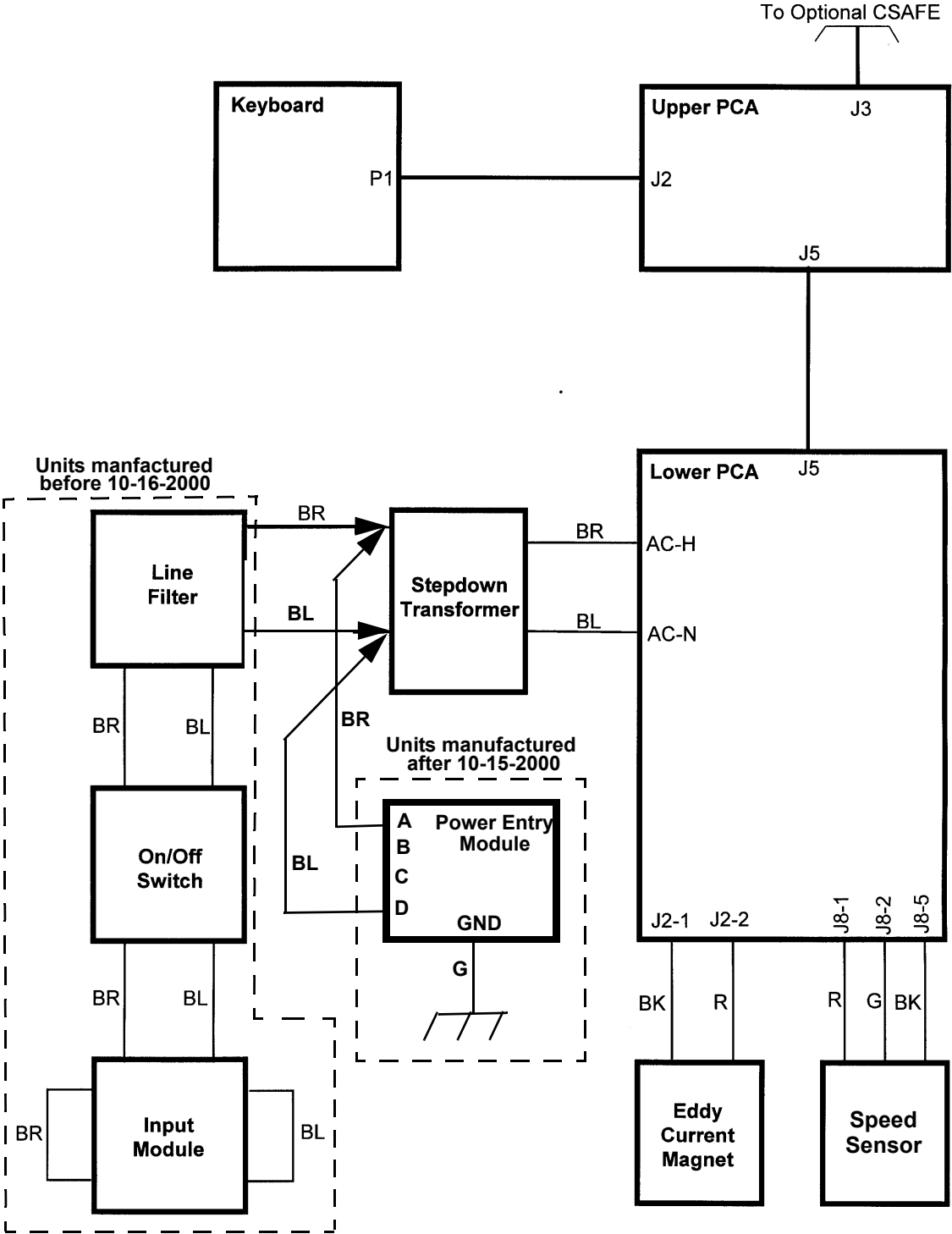
# Block Diagram 8.2 - C556 120 Vac



C556-120 EFX



# Wiring Diagram 8.3 - C556 240 Vac





# Block Diagram 8.4 - C556 240 Vac



C556-240 EFX

