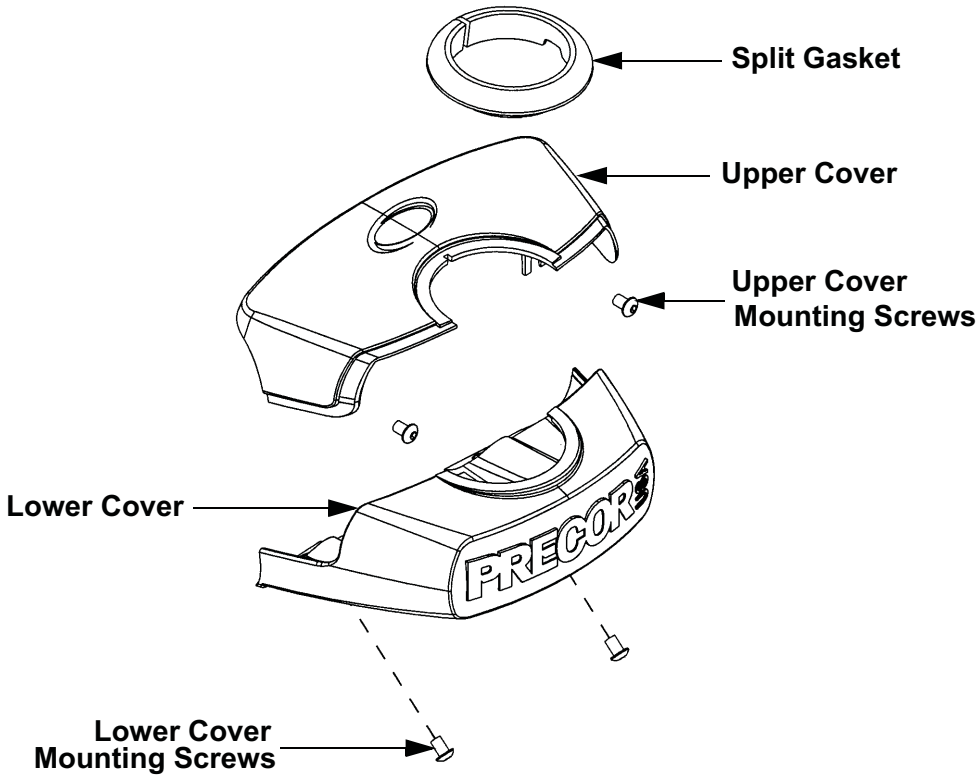
Procedure 7.1 - Replacing the Mid-Point Cover

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

20. 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



21. Fit the two replacement cover halves and gasket at their mounting positions. Hand start the four mounting screws removed in step 2.

22. 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. Remove the rear cover and disconnect the red battery lead from terminal M6 of the lower PCA.

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).

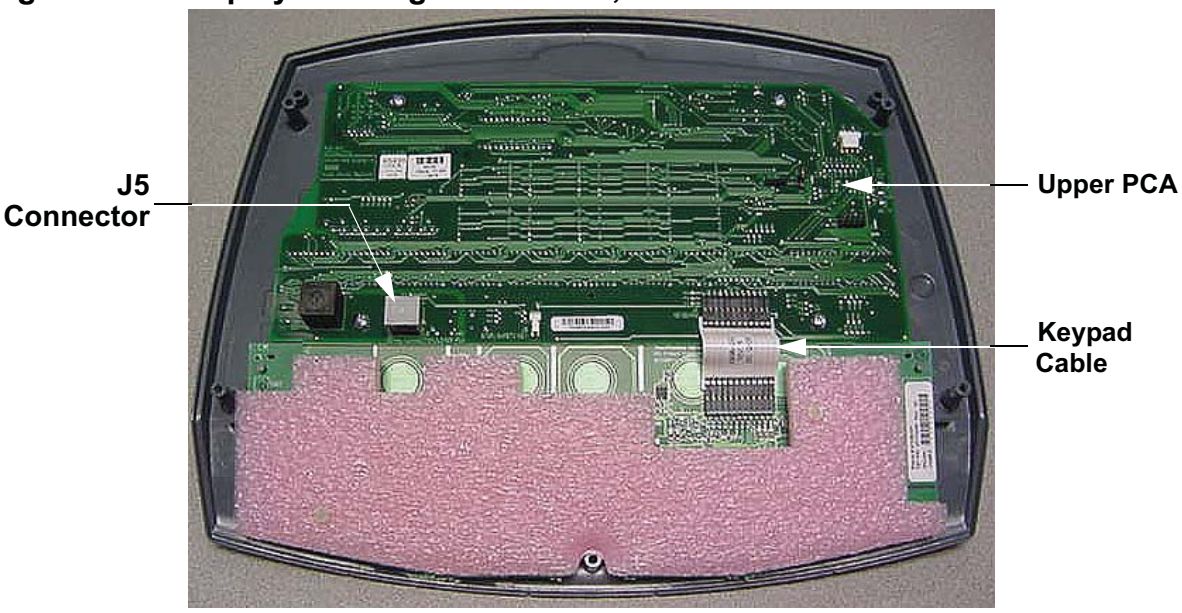
Removing and Replacing the Upper PCA

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. Replace the red battery lead removed in step 1 and check unit operation as described in Section Four.

Procedure 7.3 - Replacing the Lower PCA

Removing the Lower PCA

1. Remove the rear cover and disconnect the red battery lead from terminal M6 of the lower PCA.

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

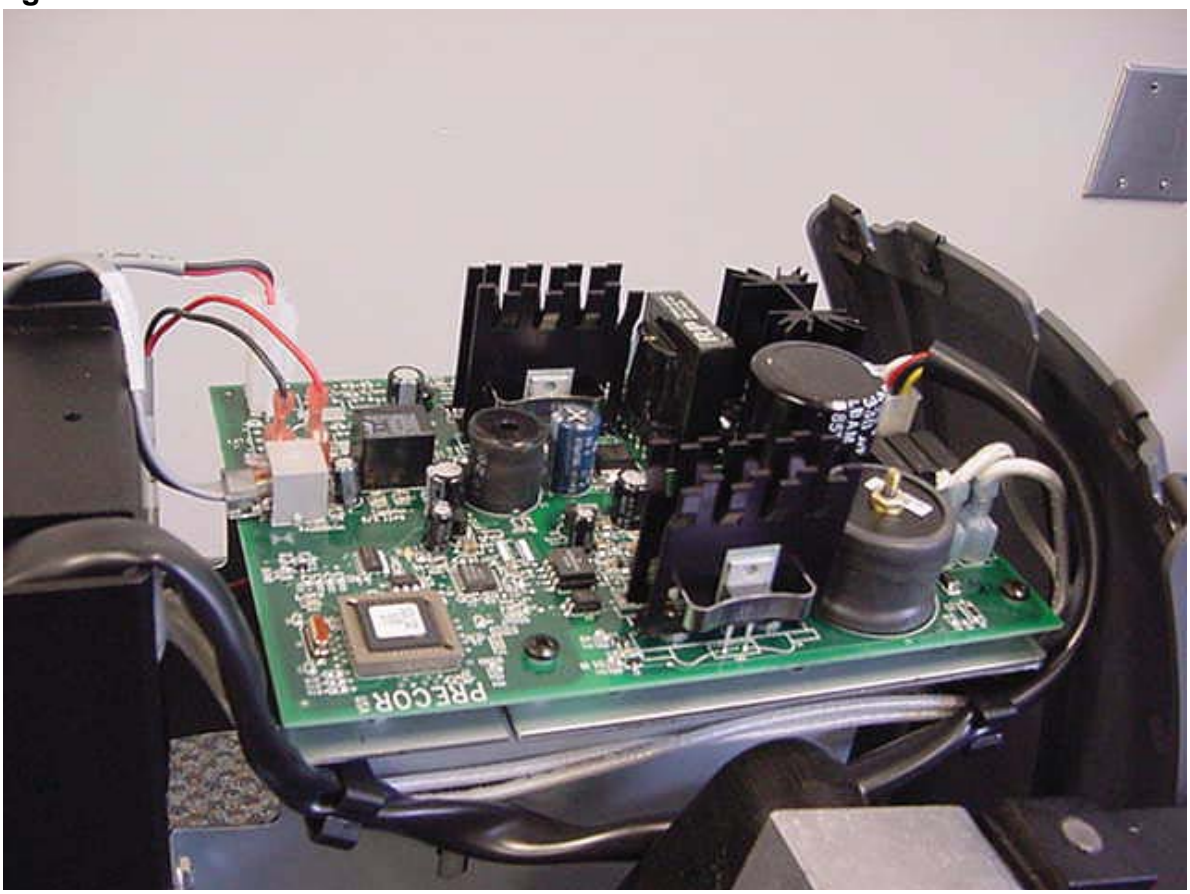
2. Remove the rear cover per Procedure 7.19.

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

4. Disconnect the all of cables and wiring from the lower PCA.

5. Remove the four screws that secure the lower PCA to the drive unit upright, refer to Diagram 7.3.

Diagram 7.3 - Lower PCA



Replacing the Lower PCA

6. Position the replacement lower PCA at its mounting position and fasten the lower PCA with the four screws removed in step 5.

7. Reconnect the lower PCA cables and wiring as follows. Connect the interconnect cable to connector J2. The 2 conductor cable (red and black wires) from the input power jack to the J4 connector. The 6 conductor cable from the generator as to connector J1. From the battery, connect the red wire to M6 and the black wire to M7 of the lower PCA. Connect the two leads from the load resistors to M1 and M2, the polarity of the load leads is not critical, either lead may be connected to either the M1 or M2 terminal.

8. Remove the ground lead of the wrist strap from the EFX frame, then remove the wrist strap from your arm.

9. Re-install the rear cover, then check the operation of the C556i 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. Remove the rear cover and disconnect the red battery lead from terminal M6 of the lower PCA.

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 11.

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 per Procedure 7.19. Disconnect the interconnect cable from the lower PCA (connector J2). 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. Reconnect the red lead battery lead removed in step 1 and replace the rear cover.

17. Check the operation of the EFX as described in Section Four.

Procedure 7.5 - Replacing a Crankarm Assembly

Removing a Crankarm Assembly

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

1. It is only necessary to remove the right or left side of the rear cover to access the crankarm being replaced. Remove the necessary side(s) of the rear cover.

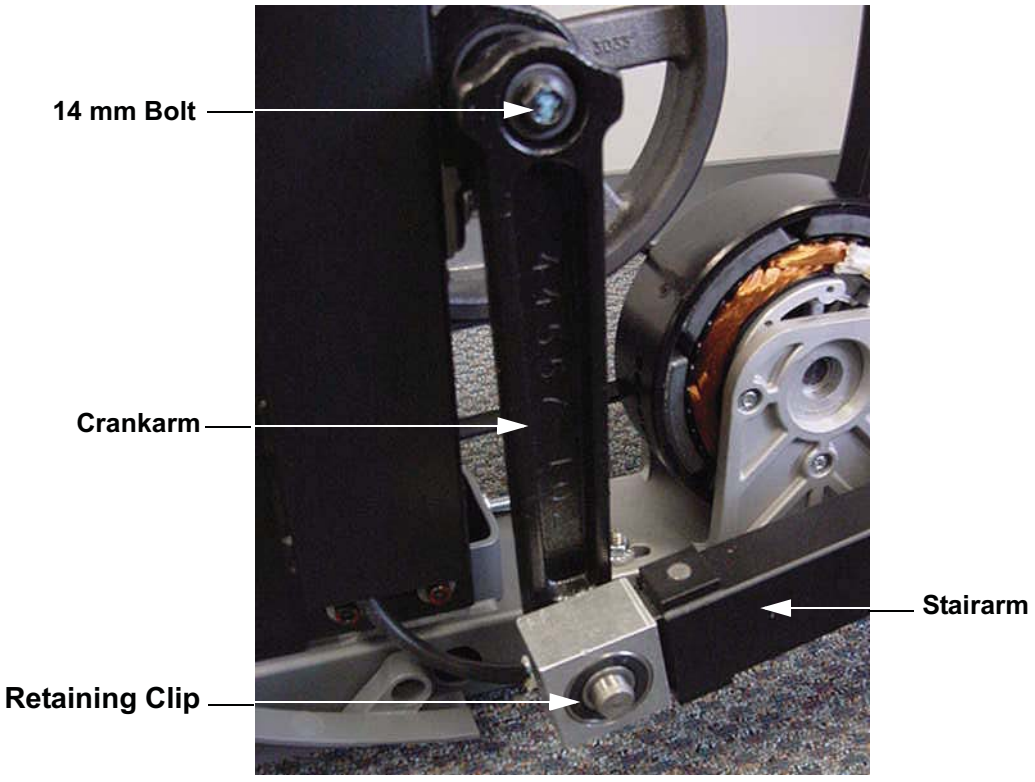
2. Remove the stairarm assembly as described in Procedure 7.12, steps 2 to 4.

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.

3. 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.

4. If you are removing both crank arm assemblies, repeat Steps 3 and 4 for the second crankarm assembly.

Diagram 7.4 - Crankarm



Replacing a Crank Arm Assembly

5. 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.

6. 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.

7. Replace the stairarm assembly as described in Procedure 7.12, steps 11 to 12.

8. If you are replacing both crankarm assemblies, repeat steps 6 and 7 for the second crankarm assembly.

9. Set the unit at it's 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. Re-torque both of the 14 mm. crankarm mounting bolts to 300in/lbs. Use the EFX for at least ten minutes while pedaling both forwards and backwards, the re-torque the crankarm bolt to 300 inch pounds.

10. Replace the rear cover.

Procedure 7.6 - Replacing the Input Pulley Belt

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 per Procedure 7.19.

2. Remove the stairarm assemblies as described in Procedure 7.12, steps 2 to 4.

3. Remove the crankarm assemblies as described in Procedure 7.5, steps 2 to 5.

4. Remove the input pulley assembly per Procedure 7.8 steps 4 to 7.

5. Remove the left and right tension bolts, locking tabs and brackets from the step up pulley assembly. Remove the generator belt from the generator's pulley.

6. Slide the step up pulley assembly with both the generator and input pulley belts out of the drive unit.

7. Remove the input pulley belt. Set the replacement input pulley belt in it's mounting position on the step up pulley assembly.

8. Set the step up pulley assembly with the generator and input belt at its mounting position in the drive unit. Replace the tensioning bolts, locking tabs and brackets removed in step 6. Thread, but do not tighten, the left and right tension bolts into the step up pulley shaft.

9. Place the other end of the generator belt on the generator's pulley.

10. Place the other end of the input pulley belt on the input pulley assembly and mount the input assembly per Procedure 7.8, steps 8 to 12.

11. Replace the crankarm assemblies per Procedure 7.5, steps 6 to10.

12. Replace the stairarm assemblies per Procedure 7.12, steps, 11 to 12.

13. Tension both belts per Procedure 5.2. Note the differences between tensioning a new belt and a existing (used) belt.

14. Check the operation of the EFX as described in Section Four.

Procedure 7.7 - Replacing the Generator Pulley Belt

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 and disconnect the red battery lead from terminal M6 of the lower PCA.

2. Remove the stairarm assemblies as described in Procedure 7.12, steps 2 to 4.

3. Remove the crankarm assemblies as described in Procedure 7.5, steps 2 to 5.

4. Remove the input pulley assembly per Procedure 7.8, steps 4 to 7.

5. Remove the left and right tension bolts, locking tabs and brackets from the step up pulley assembly.

6. Remove the three generator mounting screws shown in Diagram 7.14.

7. Remove the two bearing clamp screws shown in Diagram 7.15. Remove the bearing clamp.

8. Lift the generator and remove its drive belt.

9. Slide the step up pulley assembly with both the generator and input belts out of the drive unit.

10. Remove and discard the generator belt. Set the replacement generator belt in it’s mounting position on the step up pulley assembly.

11. Set the step up pulley assembly with the generator and input belt at its mounting position in the drive unit. Replace the tensioning bolts, locking tabs and brackets removed in step 6. Thread, but do not tighten, the left and right tension bolts into the step up pulley shaft.

12. Lift the generator and place the drive belt around the generator’s pulley.

13. Replace and tighten the three generator mounting screws removed in step 6. Set the bearing clamp in its mounting position, replace and tighten the two bearing clamp mounting screws removed in step 7.

14. Mount the input assembly per Procedure 7.8, steps 8 to 12.

15. Replace the crankarm assemblies per Procedure 7.5, steps 6 to 10.

16. Replace the stairarm assemblies per Procedure 7.12, steps, 11 to 12.

17. Tension both belts per Procedure 5.2. Note the differences between tensioning a new belt and a existing (used) belt.

18. Replace the red battery lead removed in step 1 and check unit operation as described in Section Four.

Procedure 7.8 - Replacing the Input Pulley Assembly

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 per Procedure 7.19.

2. Remove the stairarm assemblies as described in Procedure 7.12, steps 2 to 4.

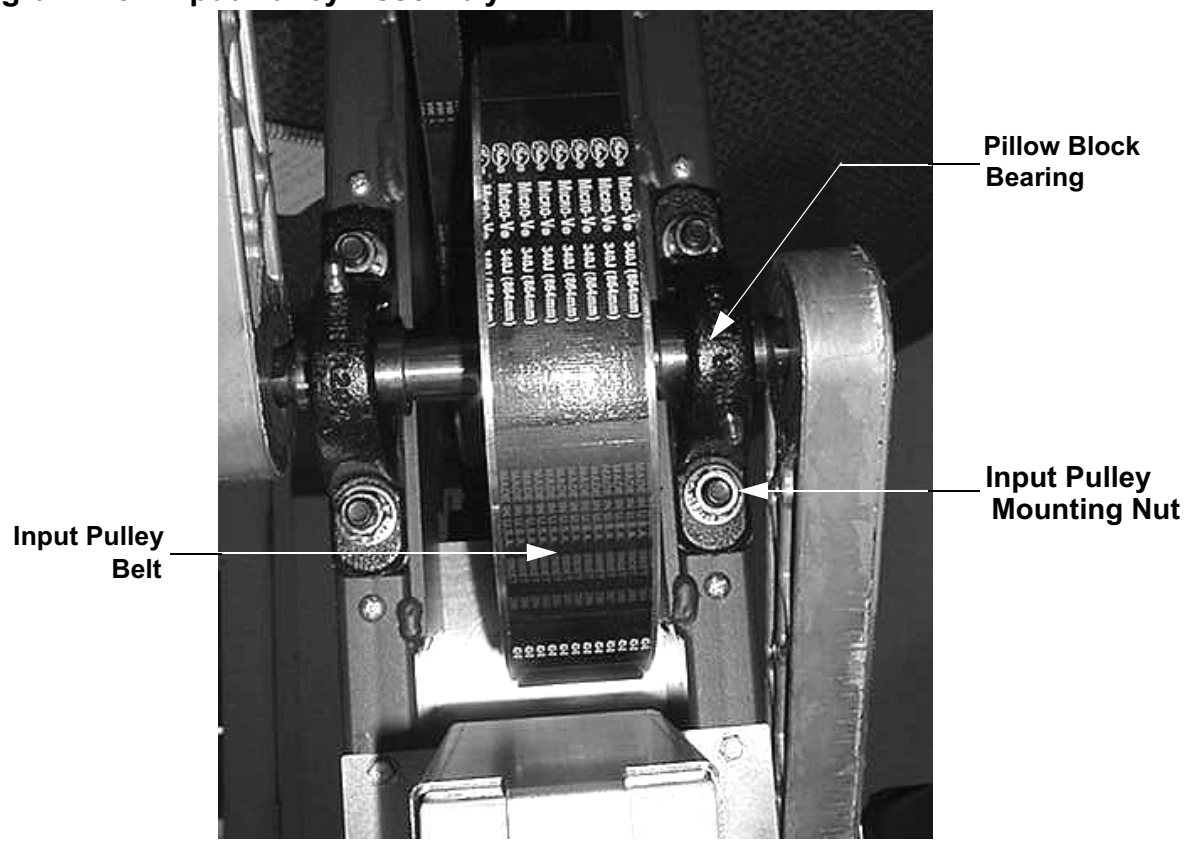
3. Remove the crankarm assemblies as described in Procedure 7.5, steps 2 to 5.

4. Remove the input pulley assembly mounting nuts (2 per pillow block bearing).

5. Remove tension from the input pulley belt as described in step 6:

6. Straighten the locking tabs and turn the left and right tension bolts counterclockwise until tension is removed from the both belts. (See Diagram 5.2)

Diagram 7.5 - Input Pulley Assembly



7. Remove the input pulley assembly. Slide input pulley belt off of the input pulley assembly.

8. Hold the replacement input pulley assembly at it's mounting position and slide the input belt over and past the pillow block bearing and onto the input pulley assembly.

9. Replace the bolts in one of the pillow block bearings and torque both nuts 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 nuts in the other pillow block bearing and torque to 500 in pounds.

10. Replace the crankarms per Procedure 7.5, steps 6 to 10. 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.

11. Tension both belts per Procedure 5.2. Note the differences between tensioning a new belt and a existing (used) belt.

12. Replace the rear cover.

Procedure 7.9 - Replacing the Step-Up Pulley Assembly

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 per Procedure 7.19.

2. Remove the stairarm assemblies as described in Procedure 7.12, steps 2 to 4.

3. Remove the crankarm assemblies as described in Procedure 7.5, steps 2 to 5.

4. Remove tension from the input pulley and generator belts as described below:

    a. Straighten the locking tabs and turn the left and right tension bolts counterclockwise until tension is removed from the both belts. (See Diagram 5.2)

    b. Remove both tension bolts and slide the input belt off of the step up pulley assembly.

5. Place the input belt and step up belt in place on the replacement step up pulley. Set other end of the generator belt on the generator pulley.

6. Replace the tension bolts and associated hardware removed in step 5b.

7. Tension both belts per Procedure 5.2. Note the differences between tensioning a new belt and a existing (used) belt.

8. Replace the crankarms per Procedure 7.5, steps 6 to 10.

9. Replace the rear cover.

Procedure 7.10 - 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.

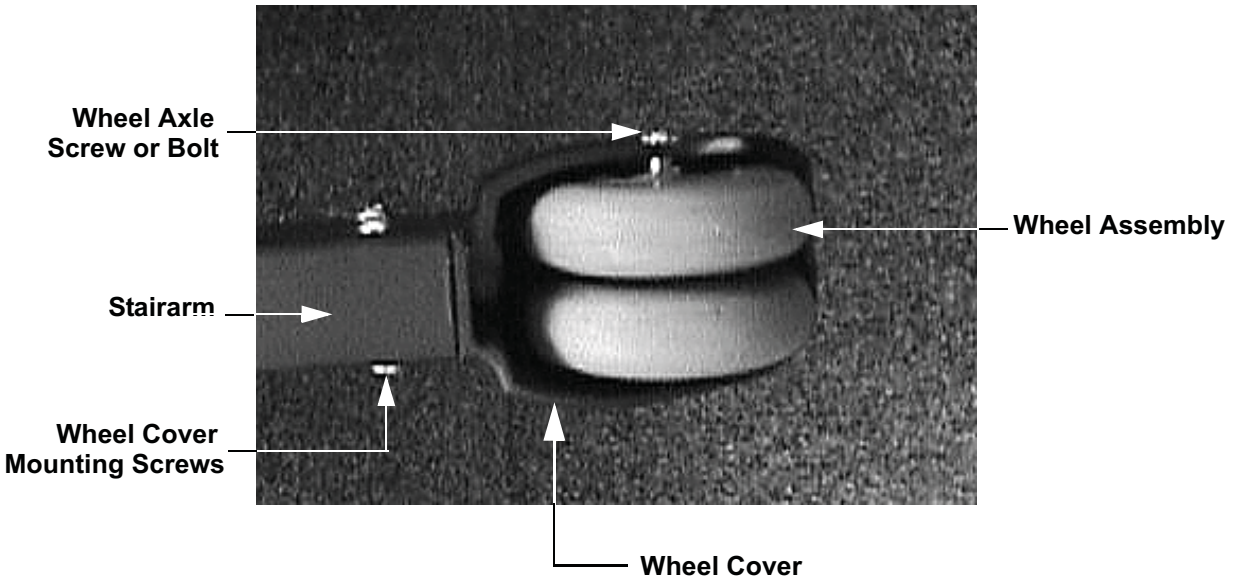
WARNING
Before continuing with this procedure, review the Warning and Caution statements listed in Section One, Things You Should Know.

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 7.6 - 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 7.11 - Replacing a Stairarm Pedal

1. Loosen and remove the two bolts that fasten the stairarm pedal onto the stairarm.
2. Remove the stairarm pedal from the stairarm.
3. Set the replacement stairarm pedal at it’s mounting position on the stairarm.
4. Install and hand tighten the stairarm pedal mounting hardware removed in step 2. Torque the stairarm pedal mounting bolts to 60 in/lbs.

Procedure 7.12 - Replacing a Stairarm

1. Remove the rear cover per Procedure 7.1.

2. Remove the retaining clip that fastens the stairarm pivot block to the crankarm. Slide the stairarm off of the crankarm.

3. Loosen and remove the two bolts that fasten the stairarm pedal onto the stairarm.

4. Remove the stairarm pedal from the stairarm.

5. Set the stairarm pedal at it's mounting position on the replacement stairarm.

6. Install and hand tighten the stairarm pedal mounting hardware removed in step 5. Torque the stairarm pedal mounting bolts to 60 in/lbs.

7. Remove the four screws that fasten the wheel/cover assembly to the stairarm. Remove the wheel/cover assembly from the stairarm.

8. Install the wheel/cover assembly on the replacement stairarm. Install and hand tighten the four wheel/cover assembly screws. Torque the wheel/cover assembly mounting screws to 70 in/lbs.

9. Slide the replace stairarm onto the crankarm. Replace the retaining clip removed in step 3.

10. Replace the rear cover per Procedure 7.1.

Procedure 7.13 - Replacing a Ramp Assembly

Procedure

1. Remove the rear cover and disconnect the red battery lead from terminal M6 of the lower PCA.

2. Rotate both stairarms to the rear of the unit.

3. Remove the bolts that fasten the lift yoke into the ramp assembly. Slide the lift yoke out of the ramp assembly and rotate the ramp assembly toward the rear of the unit.

4. Remove four rear ramp mounting bolts (2 each side). See Diagram 7.8.

Diagram 7.8 - Rear Ramp Mounting

5. Remove the ramp from the EFX.

6. Set the ramp assembly at its mounting position. Hand start the four rear mounting bolts. Slide the lift yoke into the ramp and replace and hand tighten the yoke mounting bolts. Torque the rear mounting bolts to 120 inch pounds. Torque the yoke mounting bolts to 240 inch pounds.

7. Rotate both stairarms forward onto the ramp assembly.

8. Reconnect the red battery lead removed in step 1 and replace the rear cover.

Procedure 7.14 - Replacing a Handlebar

1. Remove the rear cover and disconnect the red battery lead from terminal M6 of the lower PCA.
2. Loosen the screws that fasten the upper end of the handrail into the upper handrail clamp.
3. Loosen the four set screws that fasten the lower end of the handrail into the frame tube.
4. Slide the upper end of the handrail out of the upper handrail clamp and then slide the lower end of the handrail off of the frame tube.
5. Slide the upper end of the replacement handrail into the upper handrail clamp and then insert the lower end of the handrail onto the frame tube mount.
6. Tighten the upper handrail screws and lower handrail set screws.
7. Reconnect the red battery lead removed in step 1 and replace the rear cover.

Procedure 7.15 - Replacing the Upper Main Column

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

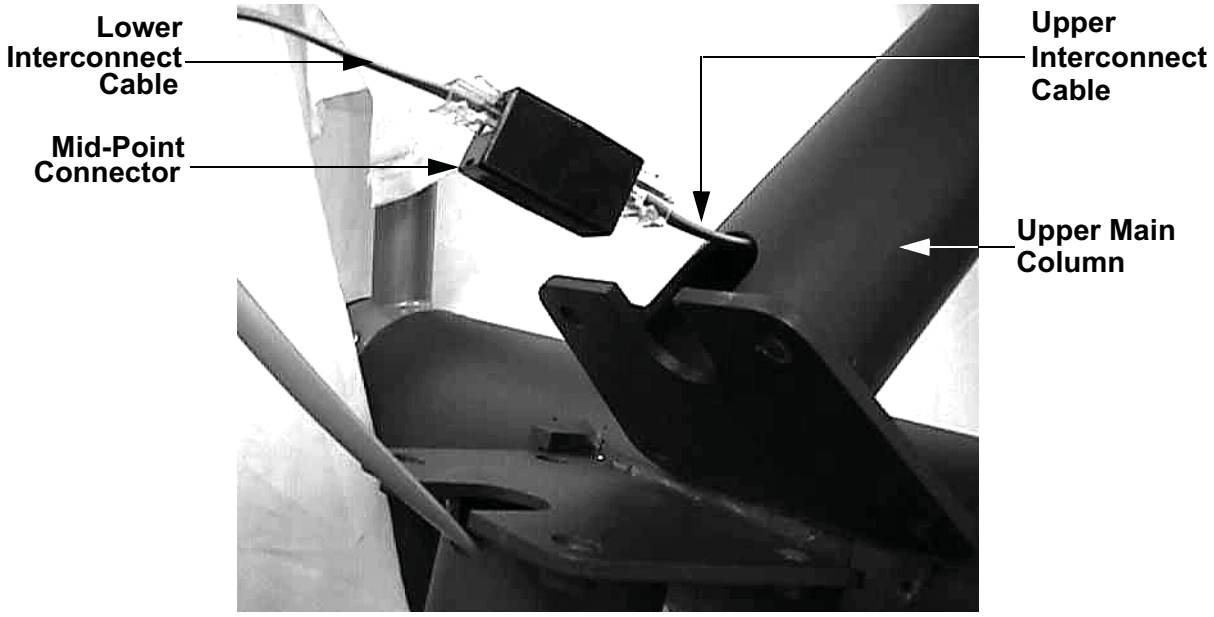
1. Remove the mid-point cover per Procedure 7.1.

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

3. Carefully reach into the access hole in the lower front of the upper main column and extract the interconnect cables.

4. Disconnect the upper interconnect cable from the mid-point connector. See Diagram 7.10.

Diagram 7.10 - Upper Main Column Mounting



5. Remove the four bolts that fasten the upper main column to the frame. Remove the upper main column.

6. 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.

7. 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.

8. Draw the upper interconnect cable out of the access hole at the bottom of the upper main column.

9. Set the upper main column at it's mounting position, hand start the four mounting bolts removed in step 5. Torque the mounting bolts to 100 inch pounds.

10. Connect the upper interconnect cable to the mid-point connector. Carefully push the interconnect cables into the upper main column access hole.

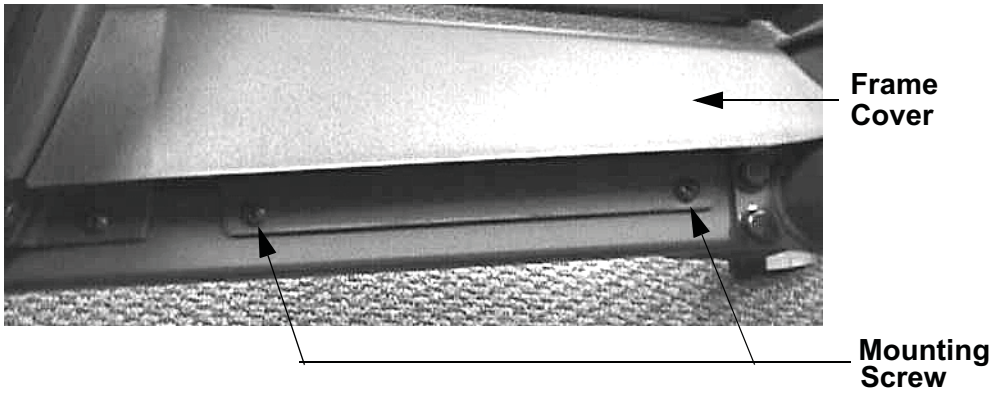
11. Replace the mid-point cover per Procedure 7.1.

Procedure 7.16 - Replace the Rear Cover

1. 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 7.11).

2. 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 7.11 - Frame Cover

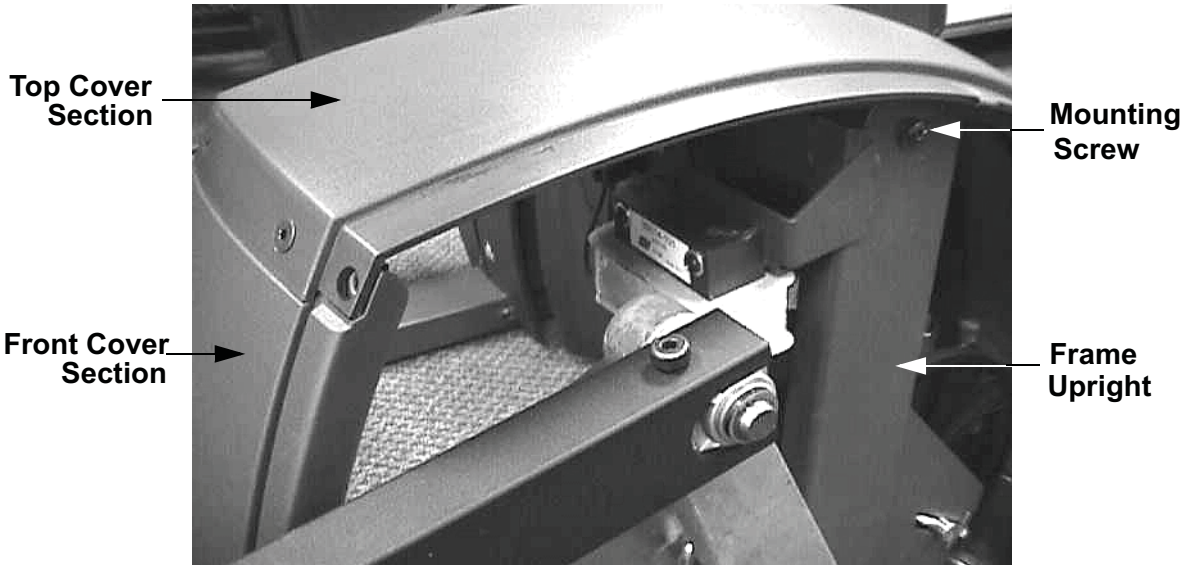


3. If you are replacing either the front or top cover section, you must first remove the left and right cover sections and then remove the cover section being replaced.

4. If you are removing the top cover (See Diagram 7.12), 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.

5. 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 7.12 - Top Cover Section (with right & left cover sections removed)



6. 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.

7. 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 phlliips screws that fasten the front cover section to the frame.

8. 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 7.12. 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.

9. 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.

10. 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.

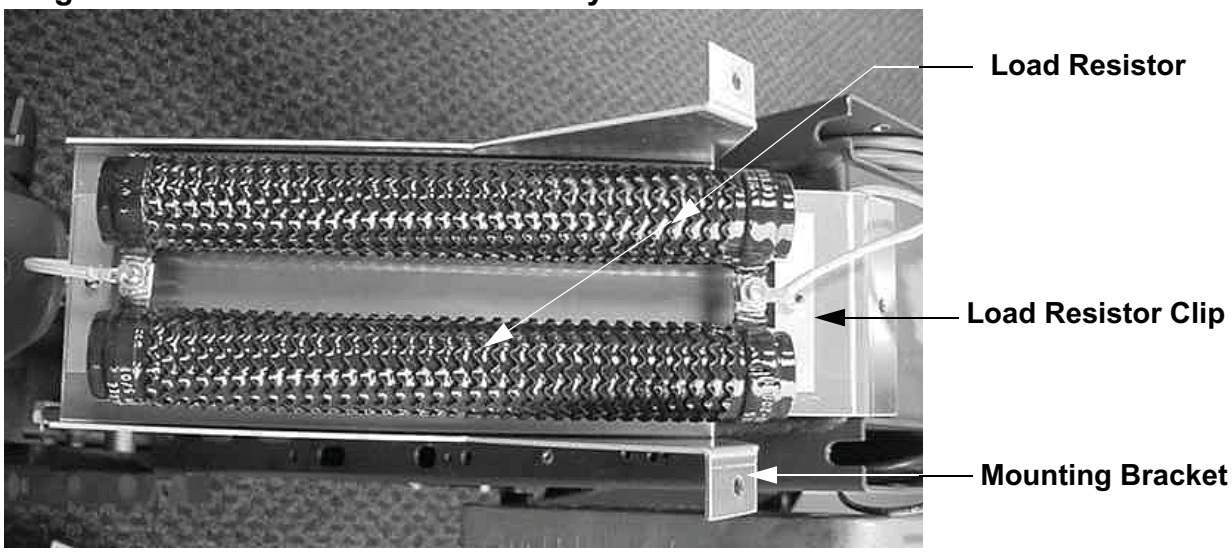
Procedure 7.17 - Replacing a Load Resistor

Warning
When the EFX is operated the load resistors get very hot. Be sure to allow the load resistors enough time to cool before continuing with this procedure.

1. Remove the rear cover and disconnect the red battery lead from terminal M6 of the lower PCA.

2. Remove the three screws that fasten the load resistor assembly and shield to the frame upright. Rotate the load resistor assembly 180 degrees and set it on the top of the frame upright. See Diagram 7.13.

Diagram 7.13 - Load Resistor Assembly



3. Remove the screws that fasten the load resistor wiring from both terminals of the resistors.

4. Remove the screw that fastens one of the load resistor clips to the mounting bracket. Remove the resistor(s) being replaced.

5. Slide the replacement resistor into its mounting position so that its terminals contact the terminals of the other load resistor. Slide the load resistor clip, removed in step 4 into the opposite end of both resistors and fasten the load resistor clip to the mounting bracket with the screw removed in step 4.

6. Reconnect the load resistor wiring removed in step 3. When compete the resistors should be connected to each other with a load resistor wire connected to each terminal of the resistors.

7. Rotate the load resistor assembly back into its mounting position with the shield between the load resistor and the frame upright. Fasten the load resistor assembly and shield to the

frame upright with the screws removed in step 2.

8. Route the load resistor wires into the slots at the top of the frame upright. This will keep the wires away from all moving parts, such as the stairarms.

9. Reconnect the red battery lead removed in step 1 and replace the cover.

10. Check the operation of the EFX as described in Section Four.

Procedure 7.18 - Replacing a Generator

WARNING
When the unit is used, stairarms are in motion or the generator is rotated by any means, the generator will produce potentially hazardous voltages even when the battery is disconnected.

1. Remove the rear cover and disconnect the red battery lead from terminal M6 of the lower PCA.

2. Remove the three generator mounting screws shown in Diagram 7.14.

3. Remove the two bearing clamp screws shown in Diagram 7.15. Remove the bearing clamp.

4. Lift the generator and remove its drive belt.

5. Loosen all four generator mounting nuts. Loosen the locking nut on the generator's adjustment bolt and thread the adjustment bolt into tab to remove tension from the generator's drive belt. Remove the drive belt from the generators pulley.

6. Remove the four generator mounting nuts. Disconnect the generator's cable connector from the intermediate cable and remove the generator from the EFX.

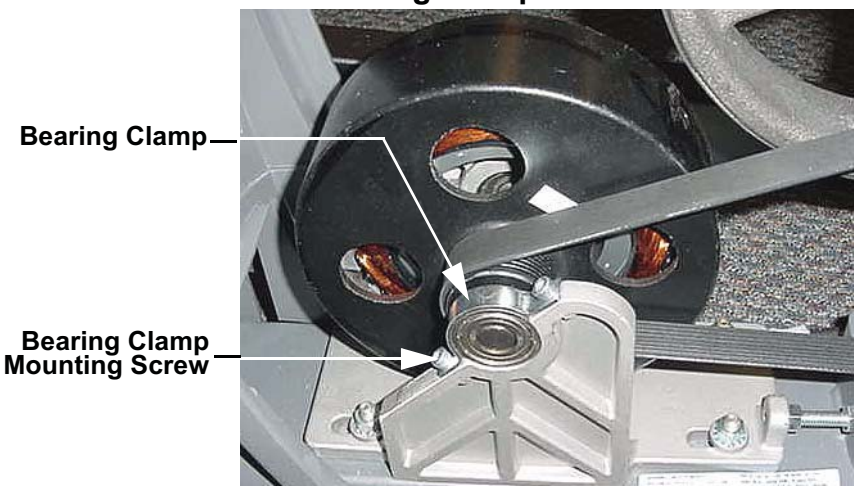
7. Remove the adjustment bolt and it's locking nut from the generator's mounting base.

8. Thread the adjustment bolt and locking nut into the tab on the replacement generator.

Diagram 7.14 - Generator Mounting

9. Set the replacement generator at its mounting position. Remove the three generator mounting screws, the two bearing clamp screws and the bearing clamp. Lift the generator and place the drive belt around the generator's pulley.

Diagram 7.15 - Generator Bearing Clamp



10. Replace and tighten the three generator mounting screws removed in step 9. Set the bearing clamp in its mounting position, replace and tighten the two bearing clamp mounting screws removed in step 9.

11. Hand start, but do not tighten the four mounting nuts removed in step 6. The generator must be able to move in order to adjust the belt tension.

12. Adjust the generator drive belt tension per Procedure 5.3.

13. Reconnect the red battery lead removed in step 1 and replace the rear cover.

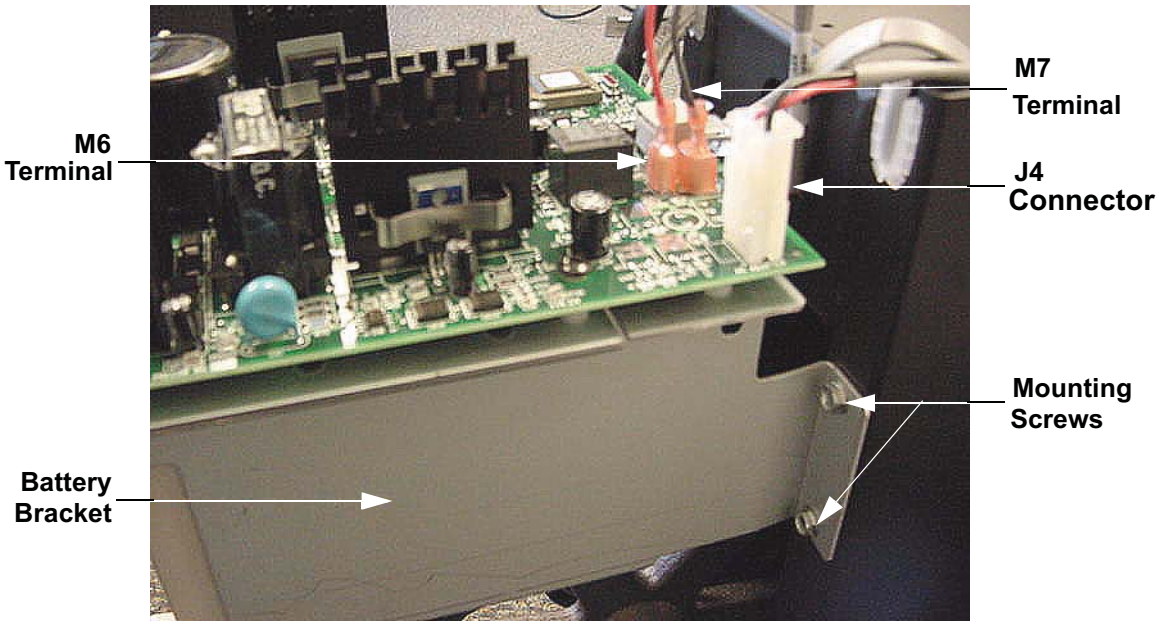
14. Check the operation of the EFX as described in Section Four.

Procedure 7.19 - Replacing a Battery

1. Remove the entire rear cover, including the front section of the cover.

2. Disconnect the red battery lead from terminal M6 of the lower PCA and the black battery lead from M7 of the lower PCA of the lower PCA. Refer to Diagram 7.16.

Diagram 7.16 - Lower PCA, Battery Assembly



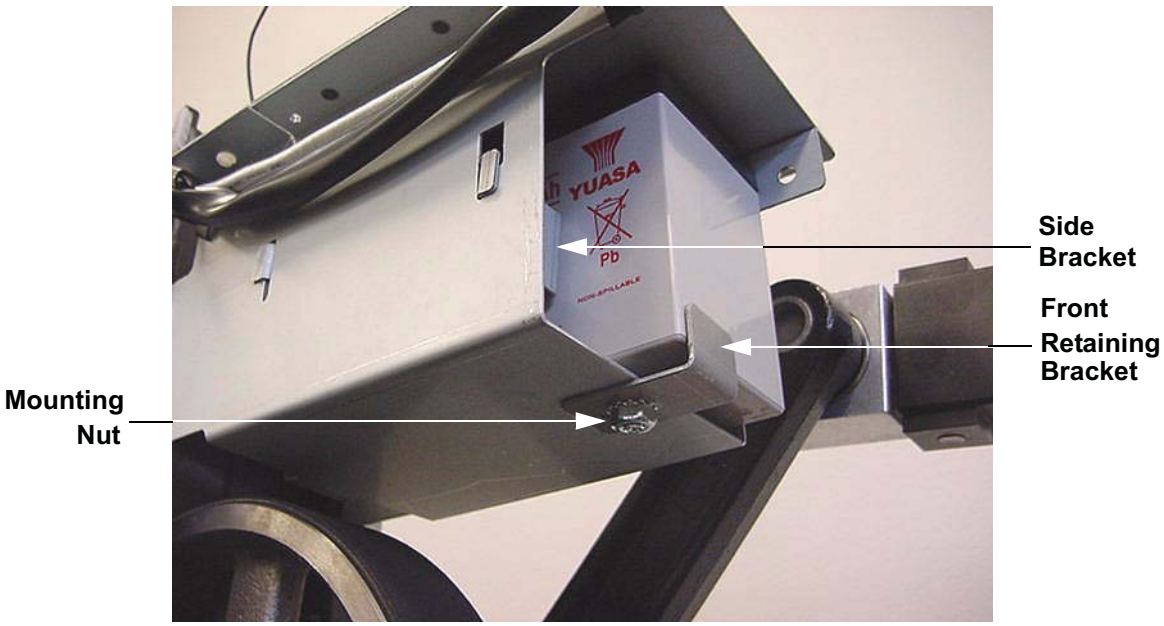
3. Disconnect the J1 (generator cable), J2 (data cable), J3 (lift cable), J4 (power adapter), M1 and M2 load cables from the lower PCA.

4. Use an antistatic wrist connect to a grounding point when performing steps 5, 6, 11 and 12.

5. Remove the four screws fastening the lower PCA to the battery bracket and remove the lower PCA and place it on a static safe surface.

6. Carefully remove the red and black wires from the battery. Ensure that the battery terminals have not been bent upward and then place a piece of electrical tape over both battery terminals. The battery is going to be slid out of the battery bracket and the battery terminals can not be allowed to touch the upper metallic surface of the battery bracket.

Diagram 7.17 - Battery Bracket, Front Retaining Bracket



7. Remove the nut fastens the front battery retaining bracket. Refer to Diagram 7.17. Carefully, slide the battery out of the battery bracket.

8. Remove the red and black wires from the replacement battery. Place a piece of electrical tape over each of the battery terminals. Ensure that the side bracket is correctly in place in the slots in the battery bracket and carefully slide the battery into the bracket.

9. Replace the front retaining bracket and fasten it with its mounting nut.

10. Remove the electrical tape from the battery terminals and reconnect the battery wires as follows: the red wire to the positive (+) battery terminal and the black wire to the negative (-) terminal. **Note:** There is a red dot next to the positive terminal of the battery.

11. Set the lower PCA in its mounting position and fasten it with the screws removed in step 5.

12. Reconnect the lower PCA wiring as follows: power adapter cable to J4, generator cable to J1, data cable to J2, lift cable to j3, load wires to terminals M1 and M2 (either wire may be connected to either the M1 or M2 terminal).

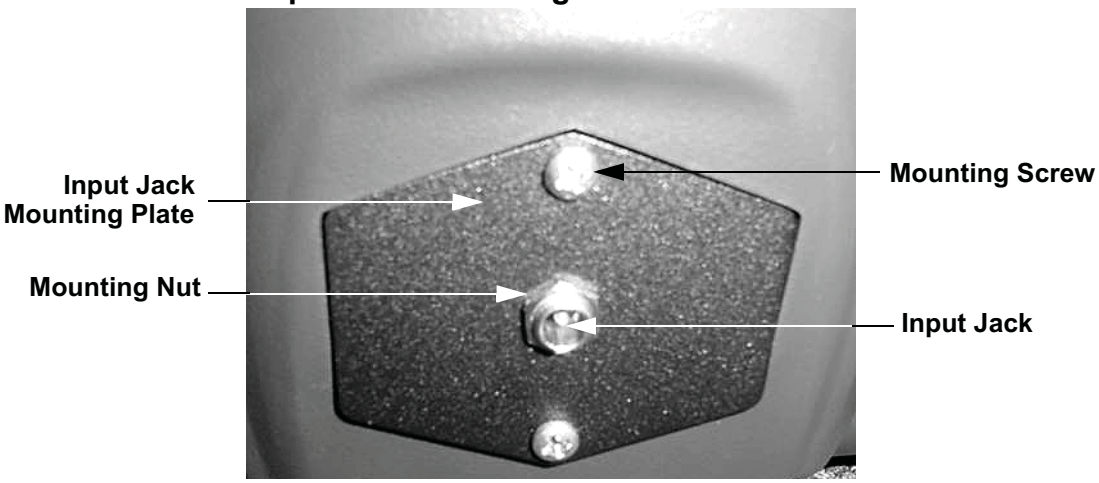
13. Replace the rear cover. Check the operation of the EFX as described in Section Four.

Procedure 7.20 - Replacing a Power Input Jack Assembly

1. Remove the rear cover and disconnect the red battery lead from terminal M6 of the lower PCA.

2. Disconnect the J4 connector from the lower PCA. See Diagram 7.16.

Diagram 7.18 - Power Input Jack Mounting



3. Remove the screws that fasten the power input jack mounting plate to the rear cover support. See Diagram 7.18.

4. Remove the power input jack mounting plate with the power input jack assembly from the unit.

5. Remove the nut that fastens the power input jack to the power input jack mounting plate. Remove the power input jack from the power input jack mounting plate.

6. Fasten the replacement power input jack to the power input mounting with the mounting nut provided with the power input jack.

7. Feed the power input jack wiring through the hole in the rear cover support and mount the power input jack mounting plate with the screws removed in step 3.

8. Route the power input jack wiring to the lower PCA. Connect the plug on the power input jack wiring to the J4 connector on the lower PCA.

9. Reconnect the red wire battery lead, removed in step 1, to the positive (+) terminal of the battery.

10. Replace the rear cover.

11. Check the operation of the EFX as described in Section Four.

Procedure 7.21 - Replacing a Lift Motor

1. Remove the left rear cover and disconnect the red battery lead from terminal M6 of the lower PCA.

2. Remove both front covers. Carefully, extract the lift motor cable from the frame access hole and disconnect the lift motor cable from the lift intermediate cable.

3. Remove the four screws that fasten the lift motor yoke into the ramp.

4. Carefully, slide the lift motor yoke out of the ramp and lower the ramp until it is resting on the frame.

5. Remove the nut, washer and bolt that fasten the lower end of the lift motor to the frame and remove the lift motor assembly from the EFX.

6. Remove the nut and bolt from the end of the lift motor drive screw. Thread the lift motor yoke assembly off of the lift motor drive screw. See Diagram 5.4.

7. Thread the lift yoke assembly, removed in step 6, onto the replacement lift motor's drive screw.

8. Install the nut and bolt, removed in step 6, into the end of the replacement lift motor's drive screw.

9. Mount the lift motor to the EFX frame with the nut, washer and bolt removed in step 5.

10. Calibrate the lift motor per Procedure 5.3.

11. Replace both front covers.

12. Reconnect the red battery lead to terminal M6 of the lower PCA. Replace the rear cover.

13. Check the operation of the EFX as described in Section Four.

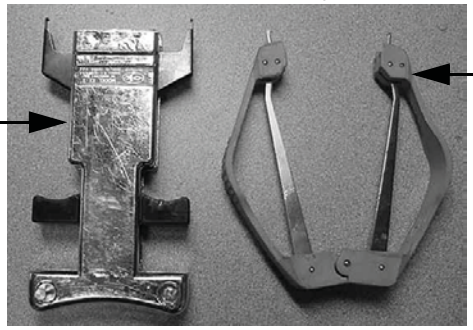
Procedure 7.22 - Replacing the PROM

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.