

C842i, C846i Bicycle

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

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

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

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

Section One - Things You Should Know

Right, Left, Front, and Back Conventions

In this manual, right, left, front, and back are from the perspective of a user sitting on the C842i or C846i, 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 C842i, or C846i, the optional power adapter must be disconnected from the cycle. Always ensure that the optional power adapter is disconnected from the cycle when you inspect or adjust the C842, C842i, C846 or C846i, or when you isolate, remove, or replace a component.

- Removing the covers exposes high voltage components and potentially dangerous moving parts. 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 operation.
- Caution statements are intended to prevent damage to the bicycle as a result of the current activity. Caution statements included in this manual are listed below:

Safety guidelines you should know and follow include:

- Read the owner's manual and follow all operating instructions.
- Visually check the bicycle 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 bicycle.
- When operating the bicycle, 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. While servicing, never place liquids on any part of the bicycle. The water bottle holder must be empty.
- To prevent electrical shock, keep all electrical components, such as the power cord and power adapters away from water and other liquids.
- Do not use accessory attachments that are not recommended by the manufacturer, such attachments might cause injuries or damage to the unit.

General Information

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

Required Tools and Equipment

The following is a summary of the tools and equipment that may be required when you service a Precor C842i, or C846i Upright or Recumbent Cycle.

Tools

Phillip and flat-head screwdrivers
Standard and metric allen wrench set
Open-end wrench set
Socket wrench set
Chip puller
Rubber mallet
Snap ring pliers
Torque wrench
Pry bar
20030-119 secondary sheave tool
32 mm deep well socket

Equipment

Anti-static kit
Digital multimeter

Supplies

Cable ties

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 cycle 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 power adapter (if equipped) from the bicycle.
- Wipe down the covers, handlebars, seat and pedals with a damp cloth.

Daily Maintenance

Clean the bicycle's frame, covers, seat and pedals using a water damped cloth. Wipe the surface of the electronic console with a damp sponge or soft cloth. Dry with a clean towel.

Weekly Maintenance

- Clean underneath the bicycle, following these steps:
 1. Turn off the bicycle with the on/off switch, then unplug it from the power adapter (if equipped).
 2. Place the bicycle on its side.

Note:

Place a drop cloth under the bicycle to protect the flooring and to ensure that the cycle 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 bicycle to an upright position.

Quarterly Maintenance

1. Remove the cover.
2. Thoroughly clean inside the bicycle. Use a vacuum cleaner and damp rag all dust belt particles, etc.
3. Check the belt tension of both belts per Procedures 5.1 and 5.2.
4. Replace both covers.

On-Site Preventive Maintenance (Service Technician)

When you are called to service a C842i, or C846i, perform these preventive maintenance activities:

- Perform the software diagnostics. Check LED and keypad function. Record the odometer reading. See Procedure 3.1.
- Check speed sensor function (is RPM or speed displayed when the unit is in operation?). If not, see Procedure 6.4
- If the unit is operated at resistance level 1, does it turn freely and smoothly? If not, see Procedure 6.6.
- Visually inspect the drive belts for cracks, fraying or excessive wear.
- Visually examine all wires and check connectors and wire connections. Secure connections and replace wiring as necessary.

Procedure 3.1 - Accessing the Diagnostic Software

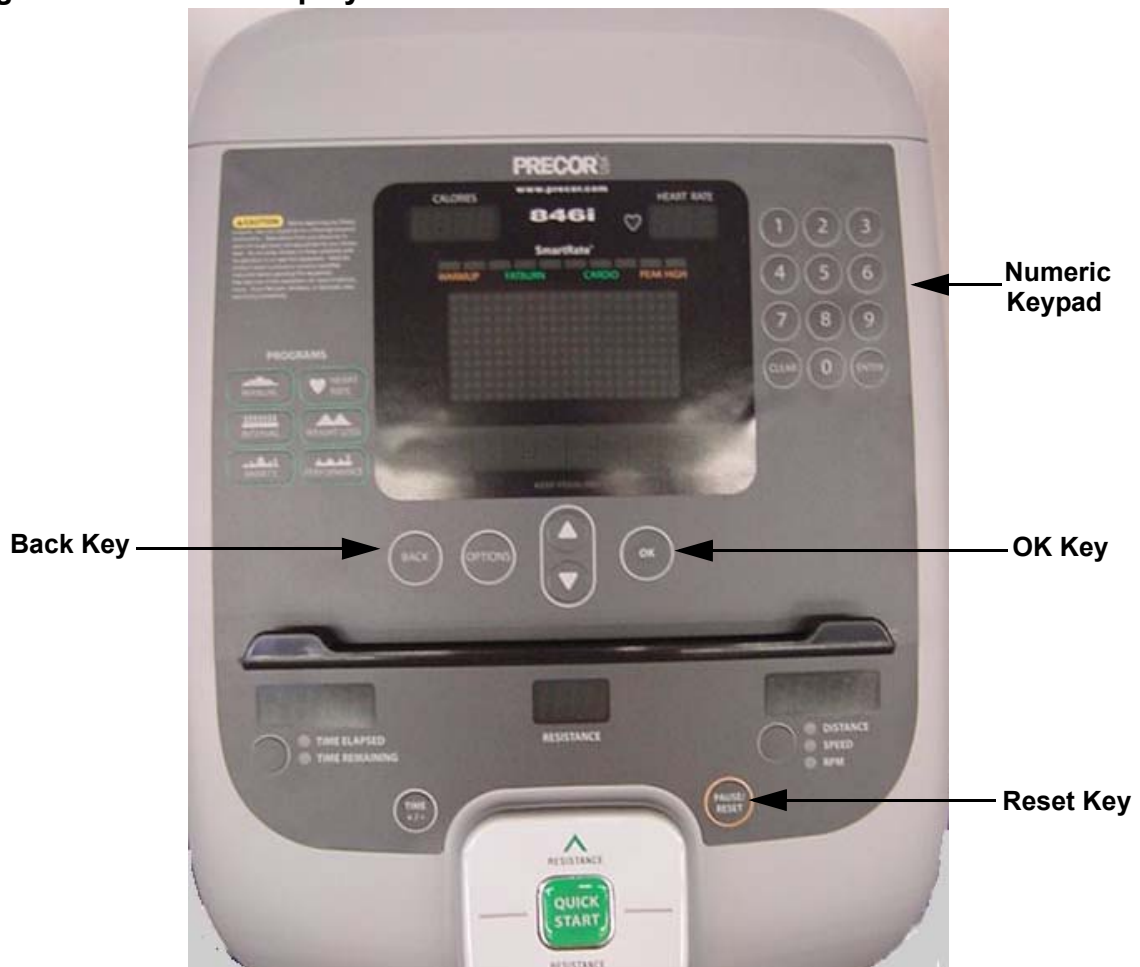
The treadmill's diagnostic software consists of the following modes:

- Display Test
- Keyboard Test
- Heart Rate Test
- Machine Test

Procedure

1. Using the **RESET** key and the numeric keypad, press keys **RESET,5,1,7,6,5,7,6,1**, sequentially.
2. **Hardware Validation** will scroll across the display followed by **DISPLAY TEST**.

Diagram 3.1 - C846i Display



3. Press the **OK** key, the upper most group of LED's will illuminate on the display. Check the display to ensure that all LED segments are illuminated.
4. Press the **OK** key four more times to display the remaining LED groups. Check each display group to ensure that all LED segments are illuminated.
5. Press the **BACK** key then the ▼ key, **KEYBOARD TEST** will scroll across the display.
6. Press the **OK** key, a representation of all of the keys on the console will be displayed. Pressing a key on the console will cause the representation of that key to go off. Press all of the keys on the console to ensure that all of the keys are functioning.
7. Press and hold the **BACK** key then the ▼ key, **HEART RATE** will be displayed.
8. Grasp both of the heart rate grips on the handlebar, after a couple of seconds the heart rate will be displayed in the heart rate and smart rate displays.
9. Use chest strap transmitter or a test transmitter to test the wireless heart rate function, after a couple of seconds the heart rate will be displayed in the heart rate and smart rate displays.
10. Press the **BACK** key then the ▼ key, **MACHINE TEST** will scroll across the display.
11. Press the **OK** key, **BRAKE** test will be displayed.
12. Press the ▼ key, **PWRB** will be displayed with the current power bit setting.
13. Press the **BACK** key, **BRAKE** test will be displayed.
14. Press the ▼ key, **RPM** will be displayed with the current pedaling speed.
15. Press the **BACK** key, **BRAKE** test will be displayed.
16. Press the ▼ key, **BATTERY** test will be displayed.
17. Press the **OK** key, the battery voltage will be displayed as **XX.X VDC**.
18. Press the **RESET** key to exit the hardware validation test.

Procedure 3.2 - Information Display

Software version numbers are invaluable for tracking and identifying problems and staying aware of changes to the operation and features of the product.

Procedure

The information display will access the following data;

- Odometer
- Hour Meter
- U-Boot Software
- U-Base Software
- Lower Software
- Serial Number
- Usage log
- Error Log

Procedure

1. Plug the power cord into the wall outlet, then turn on the treadmill with the circuit breaker.
2. With the **PRECOR** banner scrolling, press the keys **RESET,6,5**, sequentially.
3. **DIAGS-INFORMATION DISPLAY** will scroll across the display.
4. Use the **▲,▼** keys to move to the desired display shown in the list above.
5. **ODOMETER** display. Press the **OK** key.
6. The odometer will be displayed as **XXX** miles.

Note: The odometer data is stored in non-volatile memory on the upper PCA. If the upper PCA is replaced the odometer data will be lost.

7. Press the **BACK** key to exit the odometer display.
8. **HOUR METER** display. Press the **OK** key.
9. The operating time of the unit will be displayed as **12345 HOURS**. The operating time is defined as total amount of time that the unit has operated in program modes with the drive motor running. The hour meter is also used to provide the “time stamp” for the error code log.
10. Press the **BACK** key to exit the hour meter display.

11. **U-BOOT SW** display. This display the installed version of upper boot software. The boot software is used to upload new software into the upper display PCA.
12. Press the **OK** key. The software part number will be displayed as **XXXXX-XXX**.
13. Press the **BACK** key to exit the U-Boot SW display.
14. **U-BASE SW** display. This display the installed version of upper PCA software.
15. Press the **OK** key. The software part number will be displayed as **XXXXX-XXX**.
16. Press the **BACK** key to exit the U-Base SW display.
17. **LOWER SW** display. This display the installed version of lower PCA software.
18. Press the **OK** key. The software part number will be displayed as **XXXXX-XXX**.
19. Press the **BACK** key to exit the lower SW display.
20. **SER. NUMBER** display. Press the **OK** key.
21. The treadmill's serial number will be displayed. The serial number may be incorrect or not displayed if the upper PCA has been replaced.
22. Press the **BACK** key to exit the serial number display.
23. **USAGE LOG** display. Press the **OK** key.
24. Use the **▲,▼** keys to move through the list of programs. A message will scroll describing the program, the number of times and the number of minutes the program was used.
25. Press the **BACK** key to exit the usage log display.
26. **ERROR LOG** display. Press the **OK** key, the quantity of errors in the log will be displayed.
27. Press the **OK** key, the most recent error will be displayed first.
28. Use the **▲,▼** keys to move through the list of errors. The error messages will list the error name, the odometer reading when the error occurred, the hour meter when the error occurred and the drive motor current reading when the error occurred.
29. Press the **RESET** key to exit the information display.

Procedure 3.3 - Selecting Club Settings

Procedure

This procedure allows you to change the following club settings:

- Select Language
- Select Units
- Set Max Workout Time
- Set Max Pause Time
- Set Cool Down Time
- Set Resistance Range
- Set Custom Program

Procedure

1. Plug the power cord into the wall outlet, then turn on the treadmill with the circuit breaker.
2. With the banner scrolling, press keys **RESET,5,6,5,1,5,6,5**, sequentially.
3. Use the **▲,▼** keys to move to the desired display shown in the list above.
4. **DIAGS-SET CLUB PARAMETERS** will scroll across the display.
5. When **SELECT LANGUAGE** is displayed. Press the **OK** key.
6. Use the **▲,▼** keys to toggle between the available languages.
7. Press the **BACK** key to exit the select language display.
8. **SELECT UNITS** display. Press the **OK** key.
9. Use the **▲,▼** keys to toggle between **U.S** and **METRIC** measurements.
10. Press the **BACK** key to exit the set units display.
11. **SET MAX WORKOUT TIME** display. Press the **OK** key.
12. Use the **▲,▼** keys to select the maximum time a user can remain in a program.
13. Press the **BACK** key to exit the set max. workout time display.
14. **SET MAX PAUSE TIME** display. Press the **OK** key.
15. Use the **▲,▼** keys to select the maximum time a program will remain in the pause mode.
16. Press the **BACK** key to exit the set max. pause time display.

17. **SET COOL DOWN TIME** display. Press the **OK** key.
18. Use the **▲,▼** keys to select the cool down time.
19. Press the **BACK** key to exit the set cool down time display.
20. **SET RESISTANCE RANGE** display. Press the **OK** key.
21. Use the **▲,▼** keys to select to **HIGH, MEDIUM** or **LOW** resistance range.
22. Press the **BACK** key to exit the set resistance range display.
23. **SET CUSTOM PROGRAM** display. Allows programing of the custom program. Follow the instructions scrolling on the display to program the custom course. Use the **ENTER** key to save changes and exit or the **BACK** to exit without saving changes.

Procedure 3.4 - 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.).
 - d The frequency of occurrence.

Section Four - Checking C842i, or C846i Operation

This section provides you with a quick method of checking operation.

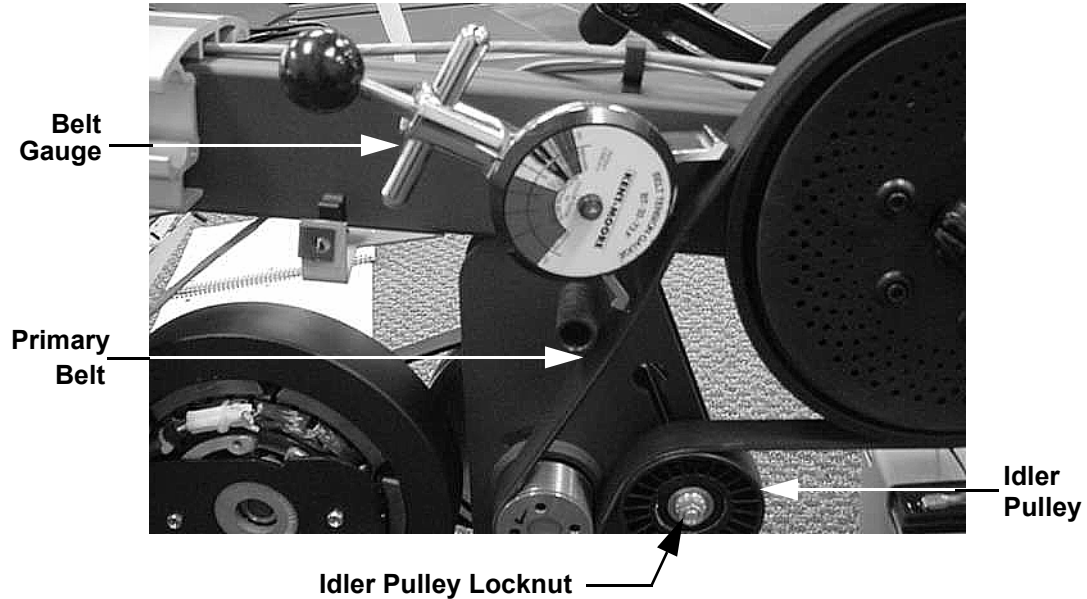
Procedure

1. On C846 version 1 units, set the on/off switch in the “on” position.
2. Start pedaling.
3. With the banner displayed, press **QUICK START**.
4. Select Resistance Level 1 and press **ENTER**.
5. Operate the C842, C846 or C846i for 4–5 minutes. As you operate the bike, concentrate on the operating sounds made by the unit. Be on the alert for unusual rubbing, hitting, grinding, or squeaking noises.
6. If the bike makes unusual noises or the electronic display does not change appropriately, troubleshoot per Section 6.
7. Press the **RESISTANCE ▲** key until you reach Resistance Level 10. Operate the C846 for another 2–3 minutes.
8. If the resistance does not change or the operation of the bike feels inconsistent compared with Resistance Level 1, troubleshoot per section 6.
9. Press the **RESISTANCE ▲** key until you reach Resistance Level 20. Operate the bike for another 2–3 minutes.
10. If the resistance of the bike does not change or operation feels inconsistent with Resistance Levels 1 and 10, troubleshoot per Procedure 6.5.
11. Check the LED's mounted on the upper PCA and the function keys displayed on the electronic console by performing Procedure 3.2.

Procedure 5.1 - Primary Drive Belt Adjustment

1. Remove the left, right and top covers. Place the belt tension gauge, as shown in Diagram 5.1, on the primary belt.

Diagram 5.1 - Primary Belt Tensioning C842i, C846i

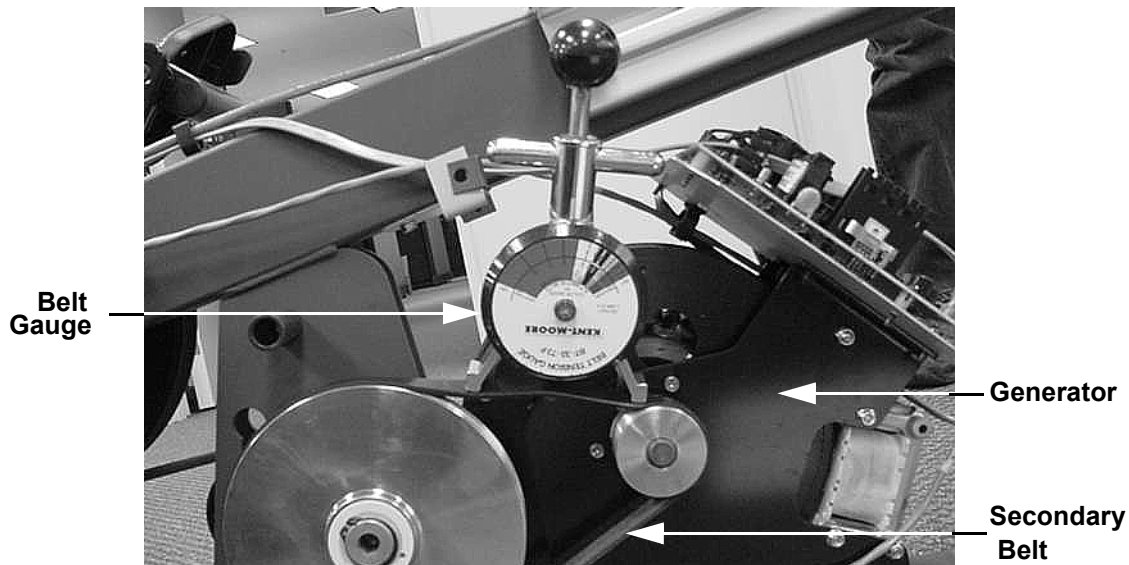


2. The belt gauge should read 95 pounds plus or minus 5 pounds. If the belt tension is incorrect, loosen but do not remove the idler pulley locknut. Insert a pry bar between the bottom side of the idler pulley and the frame tab directly below the idler pulley. Carefully, pry the idler pulley upward until the belt gauge reads 95 pounds. While maintaining the belt gauge reading at 95 pounds, torque the idler pulley locknut to 120 inch pounds.
3. Check the secondary belt tension per procedure 5.2.
4. Replace the top and both side covers.

Procedure 5.2 - Secondary Drive Belt Adjustment

1. Remove both side covers and the top cover. Place the belt tension gauge, as shown in Diagram 5.2, on the secondary belt.

Diagram 5.2 - Secondary Belt Tensioning C842i, C846i

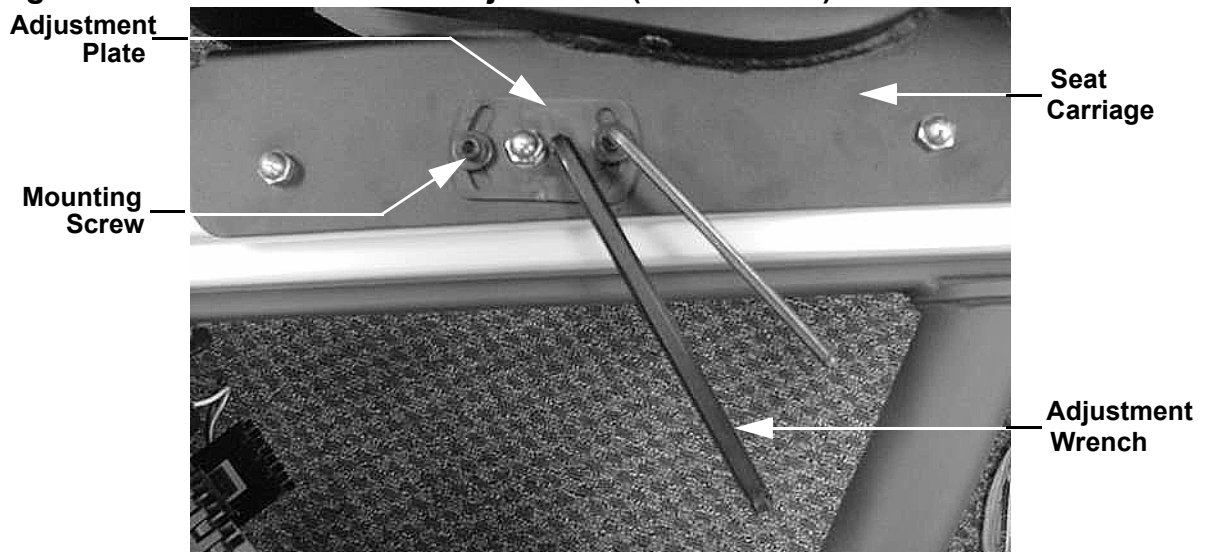


2. The belt gauge should read 90 pounds plus or minus 5 pounds.
3. The secondary belt tension is set by adjusting the position of the generator. Loosen but do not remove the four generator mounting bolts. Loosen the jam nut on the belt tension adjustment bolt mounted on the generator (see Diagram X). Adjust the belt tension bolt until the belt gauge reads 90 pounds.
4. Tighten the belt adjustment bolt's jam nut. Torque the four generator mounting bolts to 150 inch pounds.

Procedure 5.3 - Recumbent Seat Adjustment

1. Perform this procedure if the front to rear movement of the seat is too tight or there is excessive side to side seat wobble.
2. Loosen but do not remove the four mounting screws on the left and right seat adjustment plates. See Diagram 5.3

Diagram 5.3 - Recumbent Seat Adjustment (All versions)



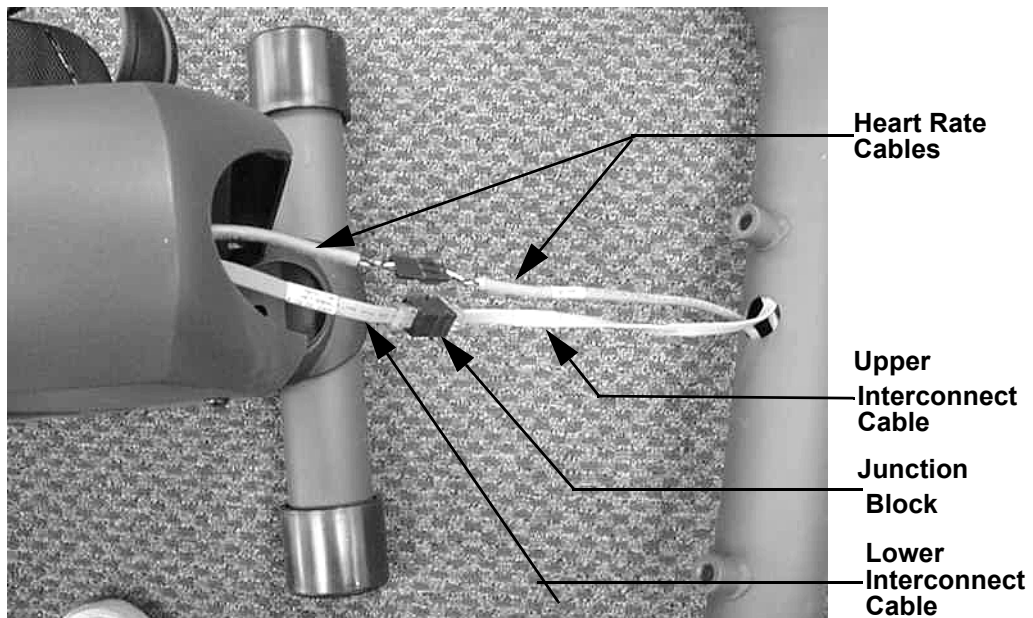
3. Insert an allen bit into the adjustment hole in one of the seat adjustment plates. Rotate the adjustment plate counterclockwise to loosen or clockwise to tighten the seat. Perform half of the adjustment using the right hand adjustment plate and half of the adjustment using the left hand adjustment plate.
4. Apply a minimum of pressure to the adjustment wrench when tightening the seat adjustment. Apply only enough pressure to rotate the adjustment plate fully clockwise.
5. When the seat is properly adjusted, the angle of rotation of both adjustment plates should be approximately the same. The seat should not wobble side to side and should move forward and backward easily.
6. Torque the four seat adjustment plate mounting screws to 120 in/lb.

Procedure 6.1 - Troubleshooting the Interconnect Cables

Troubleshooting the upper interconnect cable

1. Remove the display housing per Procedure 7.13. Disconnect the upper interconnect cable from the upper PCA.
2. Disconnect the upper interconnect cable from the junction block between the column and the main frame.

.Diagram 6.1 - Interconnect Cables, C842i, C846i



3. Connect the by-pass interconnect cable to the upper PCA and the junction block.
4. Check the operation of the cycle as described in Section Four.
5. If the problem is still present re-connect the original upper interconnect cable and proceed with step 25.

Troubleshooting the Lower Interconnect cable

6. Disconnect the lower interconnect cable from the lower PCA and the junction block.
7. Connect the by-pass cable to the junction block and the lower PCA.
8. Check the operation of the cycle as described in Section Four.
9. If the problem is still present, troubleshoot junction block

Troubleshooting the Junction Block

10. Remove the display housing per Procedure 7.13. Disconnect the upper interconnect cable from the upper PCA.
11. Disconnect the lower interconnect cable from the junction block. Connect the lower interconnect cable to the upper PCA.
12. If you have performed all of the previous tests and have not been able to locate the trouble, call Precor customer support.
13. Check the operation of the cycle as described in Section Four.

Procedure 6.2 - Troubleshooting the Keypad

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

Procedure

WARNING

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

1. If an error 5 is being displayed, continue with step 3. If one or more keys do not function, skip to step 8.
2. Remove the screws that secure the upper display assembly to the upper handrail. Carefully, pull some excess interconnect cable out from the targa upright. Rotate the display housing, so that the rear of the upper PCA is facing upward, and set the display housing on the upper handrail.
3. Attach the wrist strap to your arm, then connect the ground lead of the wrist strap to an earth ground.
4. With the power off (not pedalling), disconnect the keyboard cable from the upper PCA.
5. Start pedalling, if the error 5 is no longer present, the key board is bad. If the error 5 is still present, the upper PCA is bad. Replace either the keyboard (display housing) or the upper PCA as appropriate.
6. Substitute a known good keyboard (display housing) to determine if the keyboard is defective. If the keys not function normally, replace the original keyboard (display housing). If the same key(s) still do not function, replace the upper PCA.
7. If you have performed all of the previous tests and have not been able to locate the trouble, call Precor customer support.
8. The only means of determining if a non-functioning key is caused by the keypad or the upper PCA is by substituting a known good part. The keypad is the more likely cause, try substituting the display with keypad before the upper PCA.
9. If you have performed all of the previous tests and have not been able to locate the trouble, call Precor customer support

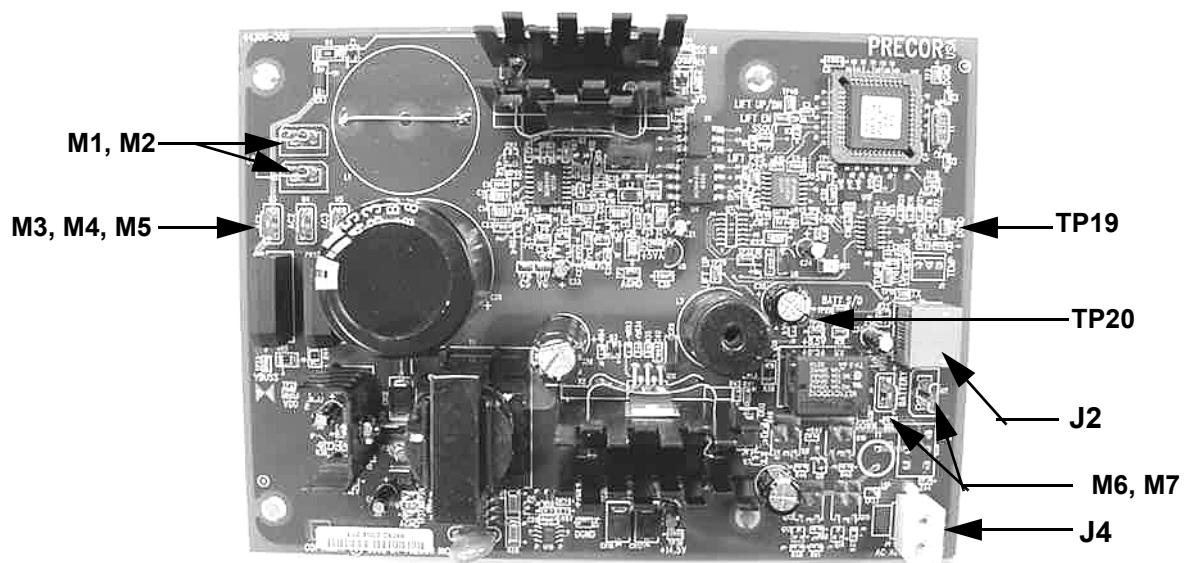
Procedure 6.3 - Display does not Illuminate

Note:

In order to conserve battery power when the cycle is not in use, a time out feature is incorporated in the cycles software. If the cycle is not used (motion not detected by the speed sensor), when in the program mode, approximately 15 seconds later, the cycle will “power down” The bike will “power up” again when pedaling is resumed (motion detected by the speed sensor). In order to measure voltages in the unit it is necessary to keep the unit powered up. This can be accomplished either by pedaling on the unit or by installing the optional external power adapter.

1. Pedal on the cycle for a minimum of 5 seconds. The system monitors one of the three phase generator windings for AC zero cross. The monitoring system notes every time the generator AC voltage passes through zero volts. By counting the zero cross rate, the system knows how fast the generator is turning. The system calculates the user RPM from the generator speed. If the system does not see a zero cross rate, it assumes the bike is not being used and the display will not illuminate when the bike is pedaled.
2. Disconnect the generator leads from terminals M3 (red) and M4 (black) on the lower PCA. Connect an AC voltmeter to the leads removed from terminals M3 and M4. Pedal the bike at about 60 RPM (1 rotation per second), the voltmeter should read approximately 120 Vac. If the voltage reading is absent or extremely low, replace the generator.
3. If the voltage reading in step 2 was normal, replace the lower PCA. If the lower PCA did not correct the problem, continue with step 4.
4. With the unit powered up, measure between test point 19 and test point 20 for approximately 8.5 Vdc. See Diagram 6.2. If the measurement is correct, skip to step 7.

Diagram 6.2 - Lower PCA, C842i and C846i



5. If the measurement in step 2 is significantly low or high, disconnect the interconnect cable from the J2 connector and repeat the measurement in step 4.
6. If the measurement in step 2 is still significantly low or high, replace the lower PCA. If replacing the lower PCA does correct the problem, skip to step 9.
7. Remove the upper display panel and disconnect the interconnect cable from the upper PCA. With the unit powered up, check the voltage between the outer two pins of the interconnect cable for DC volts. It should read approximately 8.5 Vdc. If the voltage is absent or significantly low, troubleshoot the interconnect cable and junction block per Procedure 6.1.
8. If the voltage measurement in step 4 is correct, replace the upper PCA.
9. If you have performed all of the previous tests and have not been able to locate the trouble, call Precor customer support.

Procedure 6.4 - No or Incorrect Pedaling Resistance

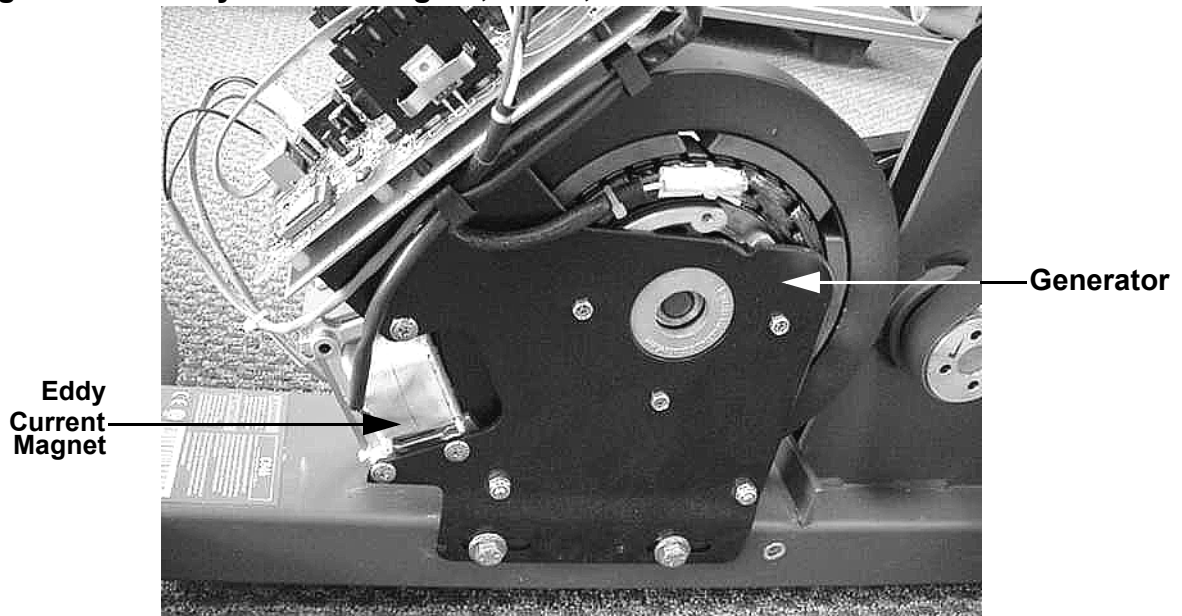
1. If the display is not illuminated, go to Procedure 6.3.
2. Enter the “manual” program and set the work level at “level 20”. Pedal the cycle and confirm that there is no resistance or that the resistance is abnormally low.

Note:

The voltage readings in this procedure will vary with the pedaling rate. Pedal the cycle at approximately 60 RPM with the work level set at “10” while taking the voltage readings in this procedure. Resistance readings must be taken with the power off and the cycle idle.

3. Measure the DC voltage at the terminals M1 and M2 of the lower PCA. See Diagram 6.9. The voltage reading should be approximately 11 Vdc. If the reading is significantly low, or significantly high, skip to step 5.
4. If the reading in step 3 was correct, the pedalling resistance should be correct, skip back to step 2.
5. Disconnect the eddy current magnet wires from terminals M1 and M2 of the lower PCA. Measure between the eddy current magnet wires with an ohmmeter. It should read approximately 10 Ω .

Diagram 6.3 - Eddy Current Magnet, C842i, C846i



6. If the measurement in step 5 was significantly high or low, replace the generator. The eddy current magnet is furnished with the generator. After replacing the generator, tension the secondary belt per Procedure 5.2.

7. If the measurement in step 5 was correct, replace the lower PCA.
8. It is highly unlikely that the RPM reading could every be present but incorrect. If this condition should occur, replace the lower PCA

Procedure 6.5 - Unit does not Mechanically Operate Freely/Quietly

1. Remove both covers per Procedure 7.1.
2. If the unit is noisy, skip to step 8. If the unit does not turn freely continue with step 4.
3. Remove the primary drive belt per Procedure 7.15.
4. Remove the secondary drive belt per procedure 7.16.
5. Turn the primary pulley, secondary pulley, idler pulley and alternator or generator by hand to determine which part is not turning freely.
6. Replace the necessary part(s) by following the appropriate procedure in Section Seven.
7. Operate the unit and listen to the noise generated. The noise will be produced by one of the following parts: primary pulley bearings, secondary pulley bearings, idler pulley, generator or alternator.
8. Replace the necessary part(s) by following the appropriate procedure in Section Seven.

Procedure 6.6 - Troubleshooting Hand Held Heart Rate

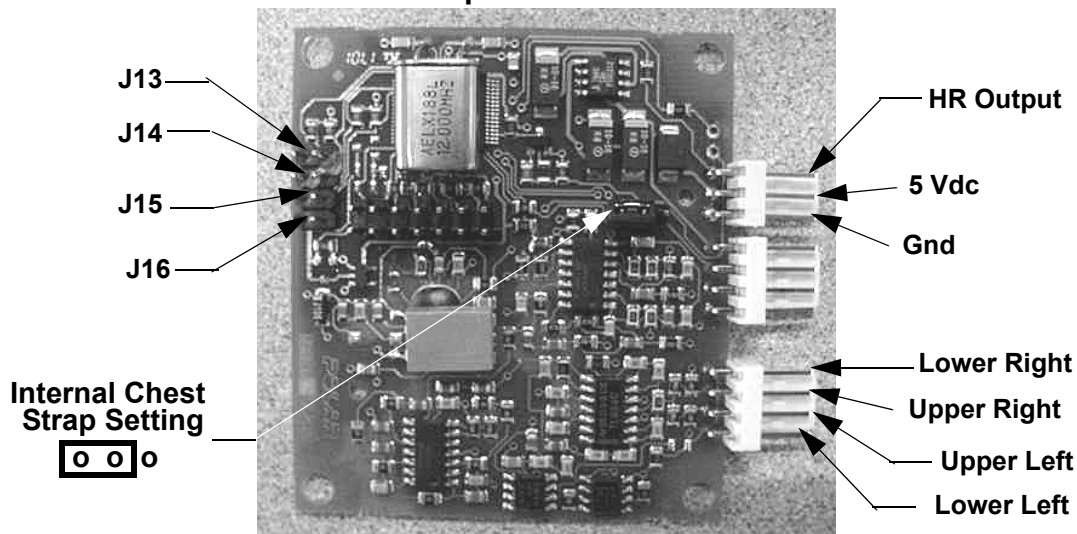
Circuit Description

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 6.7 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 6.10. 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 6.10 - 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 6.7. 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 6.7 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 Ω 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 Ω 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 Ω 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 Ω or less. If any of the above readings are greater than 1 Ω , 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.

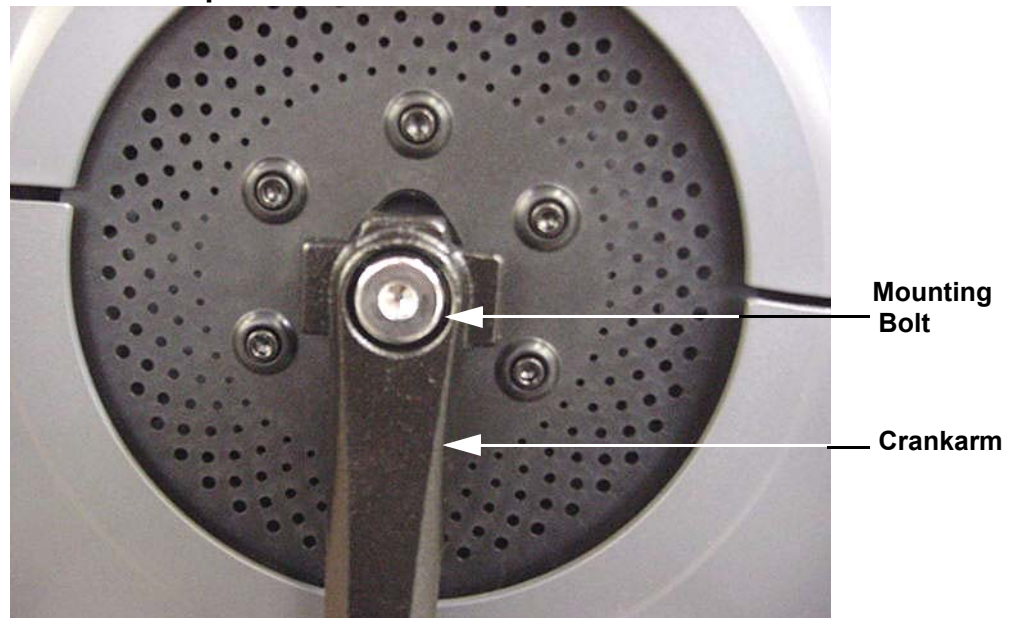
Procedure 7.1 - Removing or Replacing One or Both Covers

1. Remove four screws from the and left side of the top cover.
2. Remove two screws from the rear of the cover and two screws from the bottom of the left and right covers. Remove the left and right cover. Grasp the top cover and move it sideways away from the front column. Slide the top cover forward and off.
3. When maintenance procedures are complete, set the top cover in place. Gently spread the the two projecting legs at the rear of the cover and slide the legs under the seat rail. Take care that you do not snag the lower PCA wiring with the top cover legs.
4. Hand start the two front bolts third from the front top cover mounting bolts on both sides of the cover. Only start them a few threads, just enough so that they are securely in place.
5. Slide the top edge of the right side cover under the top cover and hand start the two remaining top bolts and the two bottom bolts.
6. Slide the top edge of the left side cover under the top cover and hand start the two remaining top bolts and the two bottom bolts. Hand start the two rear cover bolts.
7. Securely tighten all fourteen cover bolts.

Procedure 7.2 - Replacing a Crankarm

1. Grasp the pedal spindle with an open end wrench where it threads into the crankarm. The right hand pedal has normal threads and the left hand pedal has reverse threads. The Left hand pedal must be turned clockwise to loosen and counter-clockwise to tighten. Un-thread the pedal from the crankarm.
2. Remove the crankarm mounting bolt from the crankarm to be replaced. See Diagram 7.1.

Diagram 7.1 - Crankarm Replacement

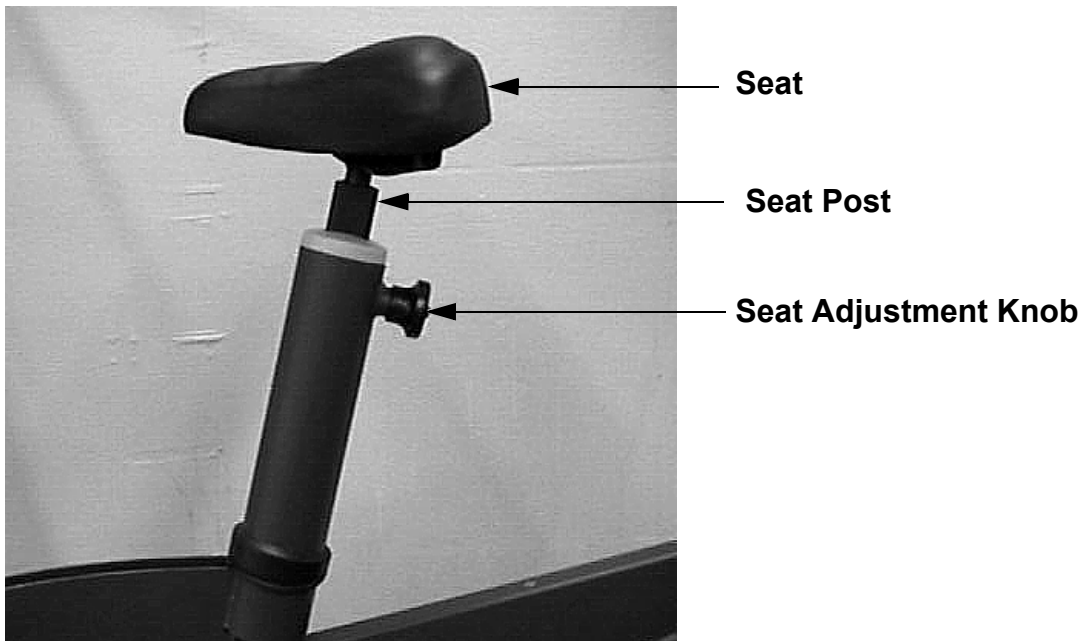


3. Remove the crankarm. It may be necessary to use a gear puller or pitman arm puller to remove the crankarm.
4. Position the replacement crankarm the input shaft. Ensure that the crankarm alignment pin engages in its mating hole in the primary pulley. Thread and hand tighten the crankarm mounting bolt into the input pulley shaft. Torque it to 420 in/lbs (35 foot pounds).
5. Hand thread the pedals into the crankarms. Remember, the left hand pedal is reverse threaded.
6. Torque the pedals to 150 inch pounds (12.5 foot pounds).
7. Set the bicycle at it's highest resistance setting and use the bicycle for a minimum of 3 minutes. Re-torque the crank arm mounting bolt to 420 in/lbs (35 foot pounds). Use the bicycle for at least ten minutes, then re-torque the crankarm bolt to 420 in/lbs (35 foot pounds).

Procedure 7.3 - Replacing the Seat or Seat Post (Upright Cycle)

1. Loosen the seat mounting nut with a box or open end wrench. Lift the seat upward and off of the seat post. If you are not replacing the seat post, skip to step 4.
2. Pull outward on the seat adjustment knob and lift the seat post out of the cycle's frame.

Diagram 7.2 - Seat, Upright Cycle

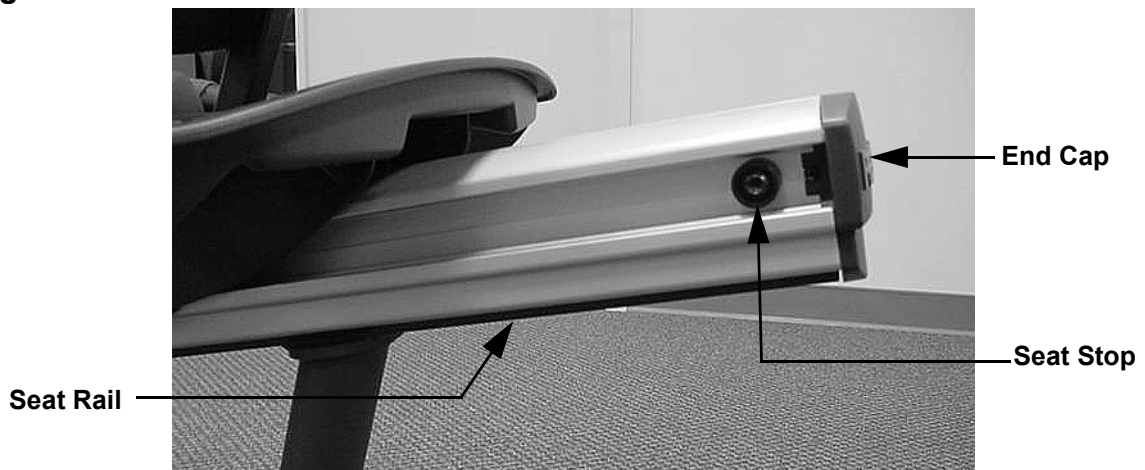


3. Pull the seat adjustment knob outward, slide the replacement seat post into place in the cycle's frame. Release the seat adjustment and move the seat post until the seat post locking mechanism snaps into place and locks the seat post into position.
4. Set the replacement seat into place on the seat post and securely tighten seat mounting nut.
5. Test the seat and seat post to ensure they are securely tightened.

Procedure 7.4 - Replacing All or Part of a Seat Carriage Assembly (Recumbent Cycle)

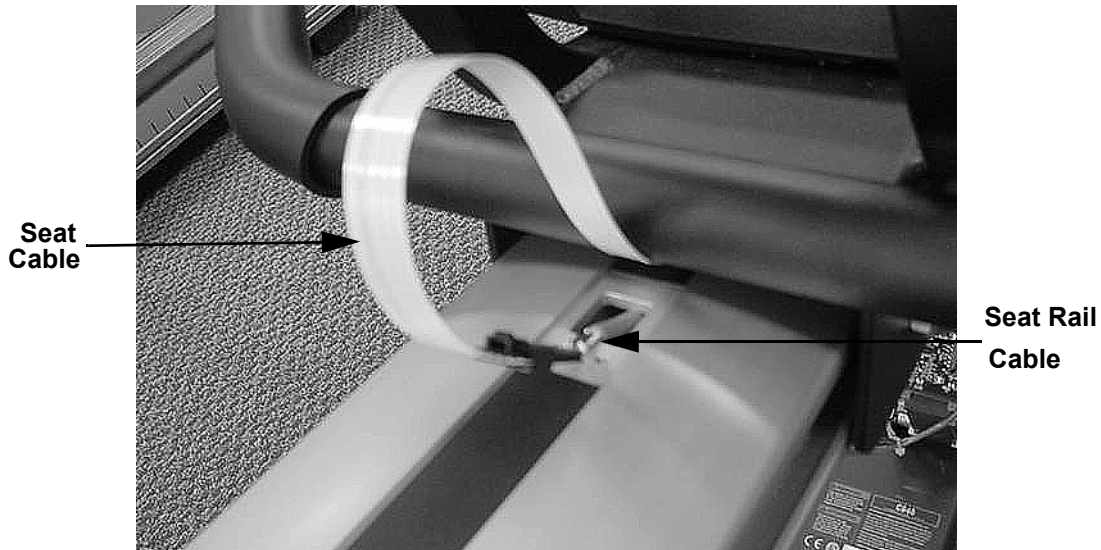
1. There is a hand held heart rate cable the connects the seat carriage to the seat rail. Care must be taken when removing the seat carriage to avoid damaging the hand held heart rate cable.
2. Move the seat to its most forward position. Remove the seat accessory tray by carefully spreading the tabs and sliding the tray off of the acorn nuts.

Diagram 7.3 - Seat Rail



3. Loosen but do not remove the two screws retaining the end cap. Remove the end cap. Remove both seat stops, one each side.
4. Locate the plate that covers the hand held heart rate cable, on the seat rail near the rear of the seat. Remove the plate. The cable may be stuck to the plate with double sided tape.
5. Remove the two screws that fasten the plate to the seat rail. Extract enough cable from the seat rail to access the cable connectors. Carefully, pull all excess cable out from under the seat, so that it is looped behind the seat. See Diagram 7.4. Disconnect the two cables.

Diagram 7.4 - Hand Held Heart Rate Cable



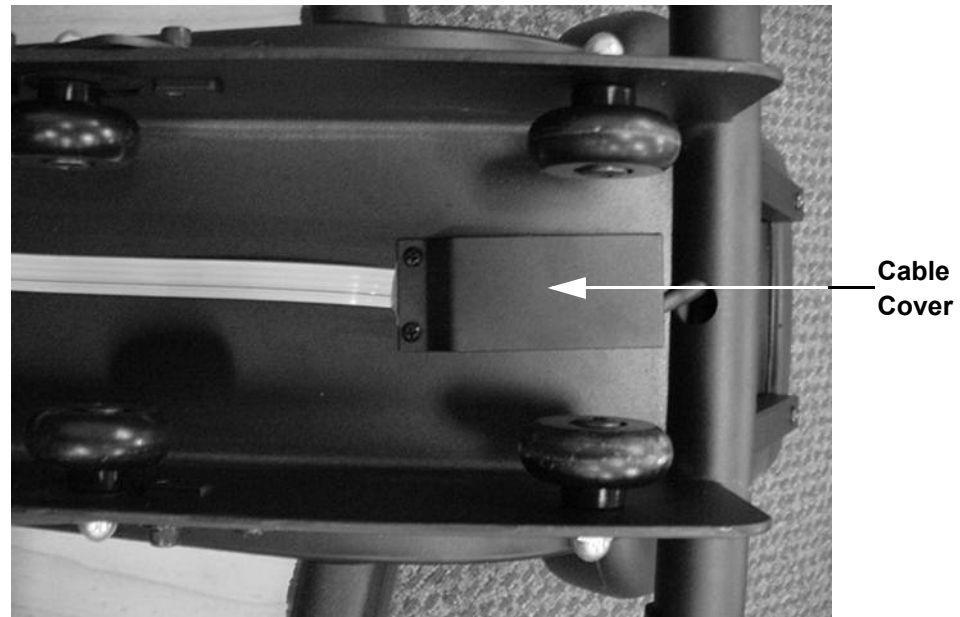
6. Slide the seat rail cable back into the access hole. The seat carriage must travel over this cable, so it must be below the surface of the seat rail. Release the seat lever, hold the cable attached to the seat straight back from the seat as you slide the entire seat and seat carriage off of the rear of the seat rail. See Diagram 7.5.

Diagram 7.5 - Hand Held Heart Rate Cable



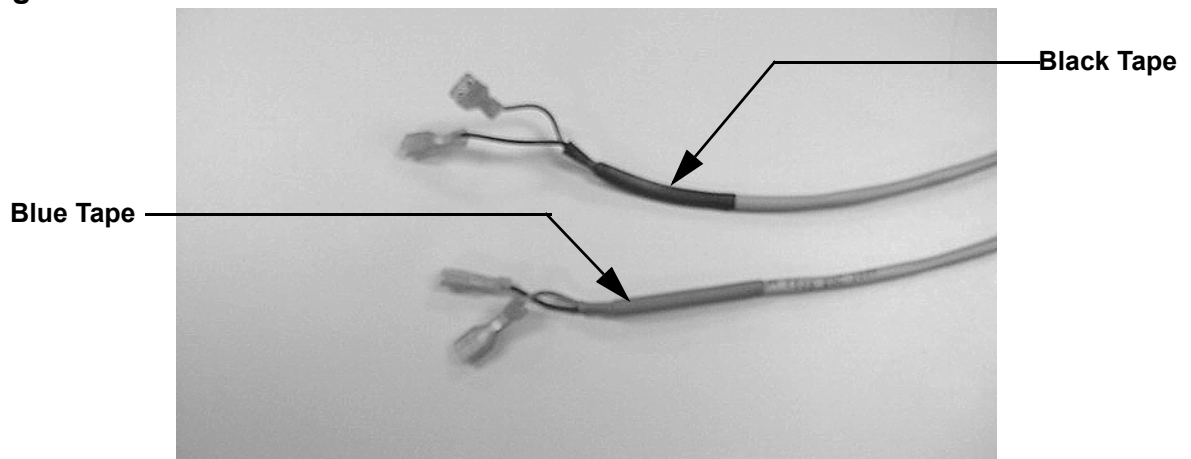
7. Remove the plate that covers the hand held heart rate cable on the bottom of the seat. See Diagram 7.6. The cable may be stuck to the plate with double sided tape.

Diagram 7.6 - Seat Bottom



8. Disconnect the external hand held heart rate cable from the internal hand held heart rate cable.
9. If only the external cable is being replaced, skip to step 14. If the internal cable is being replaced continue with step 10.
10. Remove the screws retaining the hand held heart rate contact plates from both the left and right seat handlebars. Disconnect the cable from all four hand held heart rate contact plates. Draw the internal cable out of the bottom of the seat.
11. Feed the replacement internal hand held heart rate cable into the seat. The cable with the blue tape will feed into the right handlebar and the cable with the black tape will feed into the left handlebar. See Diagram 7.7.

Diagram 7.7 - Internal Hand Held Heart Rate Cable



12. Feed the wire ends out of the handlebars so that the black wire comes out of the top of the handlebars and the red wire comes out of the bottom of the handlebar.
13. Connect the black wires to the hand held heart rate top contact plates and the red wires to the bottom contact plates. Fasten the hand held heart rate contact plates with the screws removed in step 10.
14. Connect the existing or replacement external hand held heart rate cable to the internal hand held heart rate cable. Feed the cable connectors into seat.
15. Replace the cover plate removed in step 22. Before replace the cover plate mounting screws, be sure that the cable is centered on the cover plate so that the cover plate mounting screws will not damage the external hand held heart rate cable.
16. With the seat cable extended to the rear of the seat, slide the seat onto the seat rail to its most forward position.
17. Extract the hand held heart rate cable from the seat rail and connect it to the hand held heart rate seat cable. The cables should again look as they did in Diagram 7.4.
18. Slide the cable connectors back into the seat rail and replace the plate removed in step 18. Stick the plate to the double sided tape on the cable and fasten the plate to the seat rail with the screws previously removed.
19. Carefully feed all of the excess cable back under the seat.
20. Replace both seat stops. Replace the end cap.
21. If necessary, adjust the seat wheels per Procedure 5.3.

Procedure 7.5 - Replacing the Column

1. Remove the display housing per Procedure 7.12.
2. While supporting the column, remove the two large bolts that fastens the lower portion of the column to the main frame. Carefully move the column away from the bike frame, taking care not to damage the cables shown in Diagram 6.2. Lay the column on the floor near the front of the bike.
3. Extract both cables from the column.
4. Set the replacement column on the floor near the front of the bike. Feed both cables removed in step 3 into the replacement column.
5. Attach the rubber boot, from the original column, to the bottom of the replacement column. Carefully feed the cables into the column and the main frame as you move the column into its mounting position.
6. Hand start both of the column mounting bolts removed in step 2. Securely tighten both column mounting bolts.
7. Reconnect the interconnect cable to the J1 connector on the upper PCA. Connect the hand held heart rate cable to J4 of the hand held heart rate PCA.
8. Set the display housing at it's mounting position on the display backing plate. Replace and tighten display housing mounting screws.

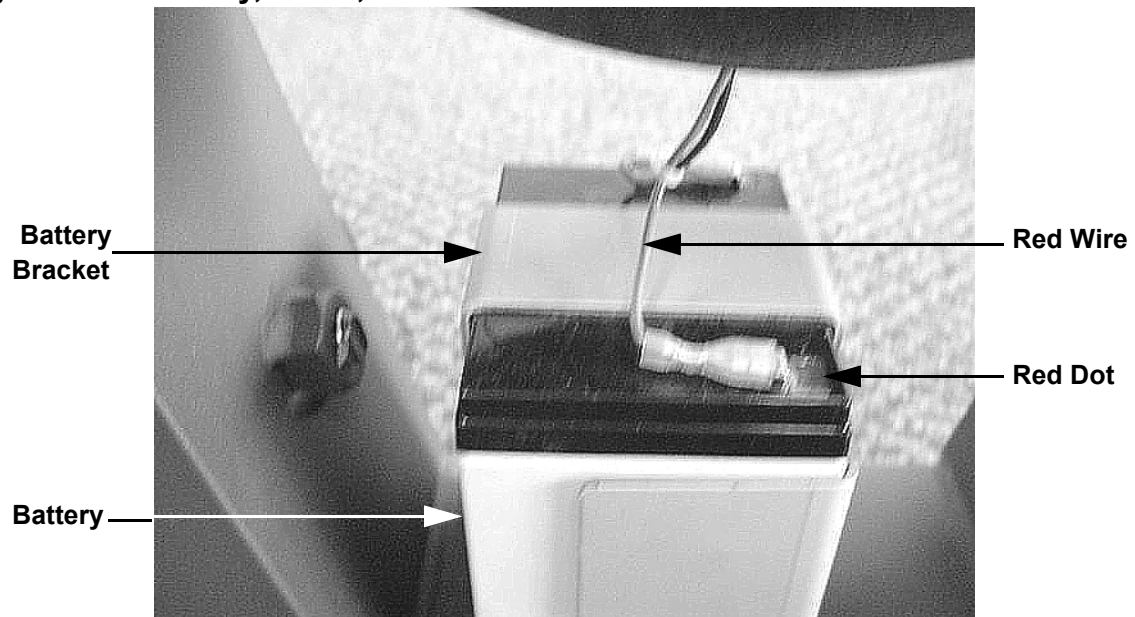
Procedure 7.6 - Replacing the Upper or Lower Interconnect Cable or Heart Rate Cable

1. Remove the display housing per Procedure 7.12. Disconnect the interconnect cable from J1 of the upper PCA or the heart rate cable from J4 of the hand held heart rate PCA.
2. Connect the replacement interconnect cable to the J1 connector on the upper PCA or the replacement hand held heart rate cable to J4 of the hand held heart rate PCA.
3. Set the display housing at its mounting position on the display backing plate. Replace and tighten display housing mounting screws.
4. If you are replacing only the upper interconnect or heart rate cable, skip to step 10.
5. On recumbent units, disconnect the lower heart rate cable from the upper heart rate cable. Slide the seat to its most forward position. Remove the plate covering the heart rate cable. Disconnect the cable in the frame from the cable to the seat. Pull the cable out of the frame from the front.
6. Feed the replacement cable into the frame from behind the seat. Pull the cable out of the front of the frame and connect it to the upper heart rate cable.
7. Connect the other end of the cable to the seat cable. Feed all excess seat cable under the seat. Replace the cable plate removed in step 5.
8. Disconnect the lower interconnect cable from the upper interconnect cable. Disconnect the lower interconnect cable from the J2 connector of the lower PCA. Remove the cable from the frame cable clips.
9. Connect the replacement lower interconnect cable to J2 of the lower PCA. Feed it through the frame cable clips and connect the other end to the upper interconnect cable.
10. While supporting the column, remove the two large bolts that fastens the lower portion of the column to the main frame. Carefully move the column away from the bike frame, taking care not to damage the cables shown in Diagram 6.1. Lay the column on the floor near the front of the bike.
11. Draw the cable being replaced out of the bottom of the column. Disconnect the cable being replaced from the lower cable. Feed the replacement cable into the top of the column. When it appears at lower access hole in the column, draw it out and connect it to its mating lower cable.
12. Verify that the rubber boot is still on the bottom of the column. Carefully feed the cables into the column and the main frame as you move the column into its mounting position.
13. Hand start both of the column mounting bolts removed in step 10. Securely tighten both column mounting bolts

Procedure 7.7 - Replacing the Battery

1. If the cycle is equipped with an external power adapter, disconnect the power adapter from the cycle.
2. Remove left side cover.
3. Disconnect the positive (red) and negative (black) wires from the battery. Remove the two screws that fasten the battery bracket to the frame. Remove the battery and battery bracket.
4. Place the battery bracket on the replacement battery and set them in their mounting position with the positive terminal (red dot) to the left side of the bike. See Diagram 7.16.

Diagram 7.8 - Battery, C842i, C846i



5. Fasten the battery bracket with battery to the frame with the screws removed in step 13.
6. Connect the red wire to the battery's positive terminal (red dot) and the black wire to the battery's negative terminal.

Procedure 7.8 - Replacing the Lower PCA

1. Disconnect the optional external power adapter, if equipped.
2. Remove the left, right and top covers.
3. Disconnect the red wire from the battery. Disconnect all of the wires from the lower PCA.
4. Remove the four lower PCA mounting screws. Remove the lower PCA.
5. Set the replacement lower PCA at its mounting position, with terminal M1 facing the front of the bike. See Diagram 6.2.
6. Refer to Diagram 6.2 and replace the lower PCA wiring as follows. Connect the wires from the external power jack to connector J4 on the lower PCA. Connect the two red wires from the eddy current magnet to terminals M1 and M2 of the lower PCA (it does not matter which red wire goes on terminal M1 or M2). Connect the red wire from the generator to terminal M3, connect the black wire from the generator to terminal M4 and the white wire from the generator to terminal M5. Connect the interconnect cable to connector J2 on the lower PCA. Connect the black wire from the battery to terminal M7 and the red wire to terminal M6 of the lower PCA.
7. Reconnect the red wire, removed in step 3, to the positive terminal (red dot) of the battery.
8. Reconnect the external power adapter, if equipped.

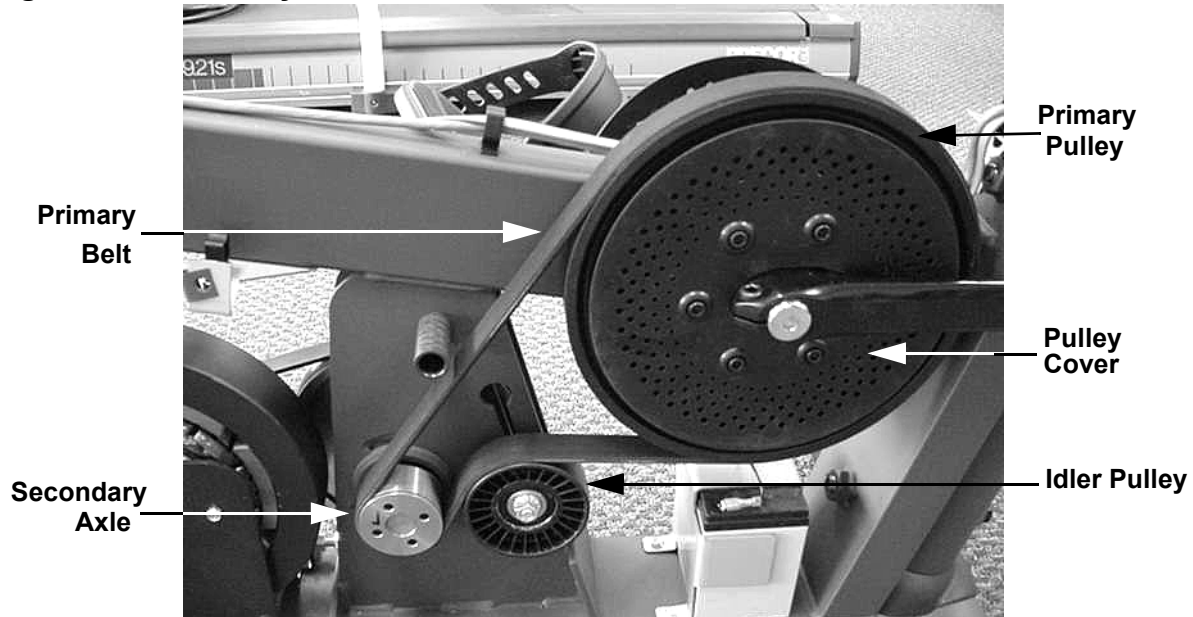
Procedure 7.9 - Replacing the Display Housing or Upper PCA

1. Remove the screws that retain the display, lift the display and disconnect the interconnect cable from the J5 connector and the heart rate cable from the J1 connector.
2. Disconnect the keypad cable from the J2 connector.
3. Remove the screws that retain the upper PCA to the display. Remove the upper PCA.
4. Many PCA's are furnished without software, If your PCA does not have an IC chip installed in the U6 socket, remove the U6 IC chip from the existing PCA (using a IC extractor and anti-static protection) and install it on the replacement PCA.
5. Set the replacement PCA in its mounting position and fasten it with the screws removed in step 1.
6. Connect the keypad cable to the J2 connector.
7. Hold the display near its mounting position and connect the interconnect cable to the J5 connector and the heart rate cable to the J1 connector.
8. Set the display in its mounting position and fasten it with the screws removed in step 14.

Procedure 7.10 - Replacing the Primary Drive Belt

1. Remove the right side cover.
2. Loosen but do not remove the locknut retaining the idler pulley. See Diagram 7.9. This will remove tension from the primary belt.

Diagram 7.9 - Primary Drive Belt, C842i, C846i

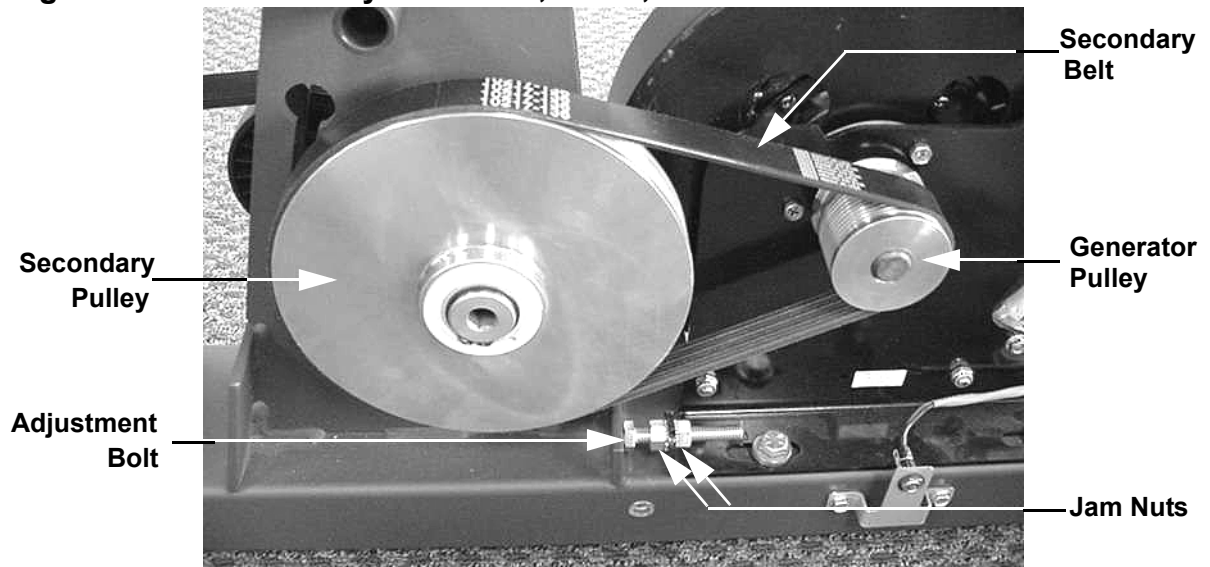


3. Remove the primary belt. Route the replacement primary belt around the primary pulley, over the idler pulley and around the secondary axle as shown in Diagram 7.9.
4. Tension the primary belt per Procedure 5.1.
5. Replace the right side cover.

Procedure 7.11 - Replacing the Secondary Drive Belt

1. Remove the left side cover.
2. Loosen the jam nuts on the secondary belt tension adjustment bolt. Loosen the adjustment bolt to remove tension from the secondary belt. See Diagram 7.10. remove the secondary belt.

Diagram 7.10 - Secondary Drive Belt, C842i, C846i



3. Route the replacement secondary belt over the secondary pulley and generator pulley as shown in Diagram 7.10.
4. Tension the secondary belt per Procedure 5.2.
5. Replace the left side cover.

Procedure 7.12 - Replacing the Primary Pulley or Primary Bearings

1. Remove the left, right and top covers.
2. Remove the left and right crankarms per Procedure 7.2. Slide the left pulley cover off of the primary pulley axle.
3. Remove the five bolts retaining the right pulley cover. See Diagram 7.9. Remove the right pulley cover.
4. Loosen the idler pulley locknut and release tension from the primary belt.
5. There are two small screws retaining the left and right hand primary pulley bearings in the frame. The screws retaining the left hand bearing are easily visible. The primary pulley has holes in it that will align with and provide access to the right hand bearing retaining screws. Remove all four bearing retaining screws.
6. Remove the large cease nut from the left side of primary pulley shaft. Slide the primary pulley out of the frame. The left hand bearing is in the frame bearing pocket, the right side bearing is part of the primary pulley assembly.
7. If the bearings are being replaced, slide the left hand bearing out of the frame pulley pocket. Slide the replacement bearing into the left hand frame pocket and fasten it with two of the bearing retaining screws removed in step 5.
8. Slide the replacement primary pulley assembly into place in the frame. Align the holes in the primary pulley with the bearing retaining holes. Fasten the right hand bearing with the remaining two screws removed in step 5.
9. Thread the large cease nut, removed in step 6 onto the primary pulley shaft and tighten. Do not over tighten the cease nut, the primary pulley must turn freely without any wobble or lateral movement.
10. Set the right hand pulley cover in its mounting position and retain it with screws removed in step 3. Torque the screws to 50 inch pounds. Slide the left pulley cover onto the primary shaft.
11. Replace both crankarms per Procedure 7.2.
12. Tension the primary belt per Procedure 5.1.
13. Replace the left, right and top covers.

Procedure 7.13 - Replacing the Secondary Pulley, Intermediate Pulley or Secondary Bearings

1. Remove the left, right and top covers.
2. If only the secondary pulley is being replaced (the secondary pulley assembly contains the clutch bearing), skip this step and continue with step 16. Loosen the idler pulley locknut and release tension from the primary belt.
3. Loosen the secondary belt adjustment bolt and remove tension from the secondary belt.
4. Remove the retaining ring from the left side of the secondary pulley shaft.
5. Slide the large thrust washer off of the secondary pulley shaft. Slide the secondary pulley off of the secondary pulley shaft. If only the secondary pulley is being replaced, skip to step 13.
6. Slide the remaining thrust washer off of the secondary pulley shaft and remove the second retaining ring from the secondary pulley shaft.
7. Insert an allen wrench into the left end of the secondary pulley shaft and remove the secondary axle with a 20030-119 secondary sheave tool and a 1/2 inch drive socket wrench. See Diagram 7.9.
8. Remove the large retaining from the right hand side bearing pocket and slide the secondary shaft out of the frame. There is now a loose wave washer still inside the frame bearing pocket. Remove and retain the wave washer.
9. The left side bearing, secondary axle or secondary shaft assembly may now be replaced as required.
10. Slide the wave washer, from step 8 onto the longer end of the secondary shaft. Slide the longer end of the secondary shaft into the left side bearing. Replace the large retaining ring, removed in step 21, into the right hand side bearing pocket.
11. Insert an allen wrench into the left end of the secondary pulley shaft, thread the secondary axle onto the secondary axle and tighten with a 20030-119 secondary sheave tool and a 1/2 inch drive socket wrench.
12. Replace the inside retaining ring, removed in step 6, onto the secondary pulley shaft. Slide one of the thrust washers onto the secondary pulley shaft.
13. Slide the replacement secondary pulley onto the secondary pulley shaft.
14. Slide the remaining thrust washer onto the secondary pulley shaft. Replace the outside retaining ring, removed in step 14

15. Route the secondary belt over the secondary pulley and the generator pulley. Tension the secondary belt per Procedure 5.2.
16. If necessary, route the primary belt around the primary pulley, over the idler pulley and around the secondary axle as shown in Diagram 7.9. Tension the primary belt per Procedure 5.1.
17. Replace the left, right and top covers.

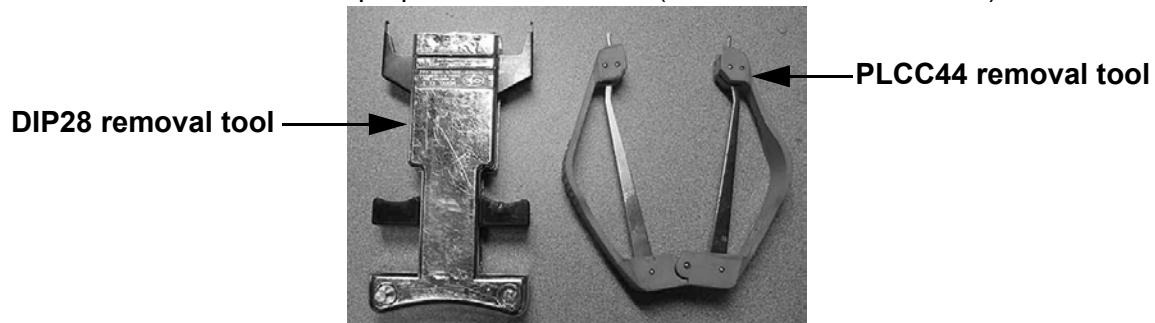
Procedure 7.14 - Replacing the Idler Pulley

1. Remove the right hand cover.
2. Loosen the idler pulley locknut to remove tension from the primary belt. Then remove the idler pulley locknut. Remove the idler pulley from its mounting bolt.
3. Slide the replacement idler pulley onto its mounting bolt and hand start the idler pulley locknut.
4. Tension the primary belt per Procedure 5.1.
5. Replace the right hand cover.

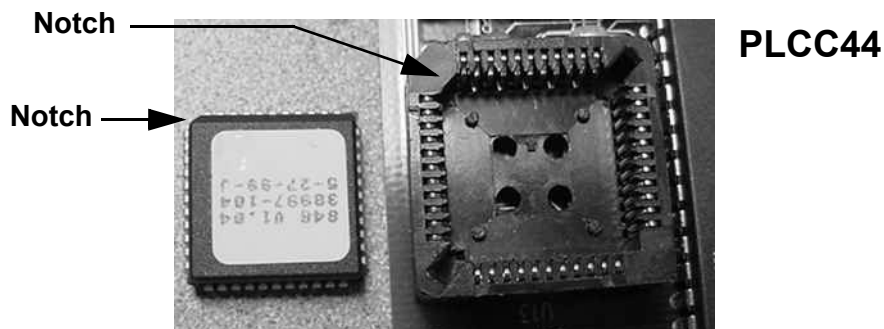
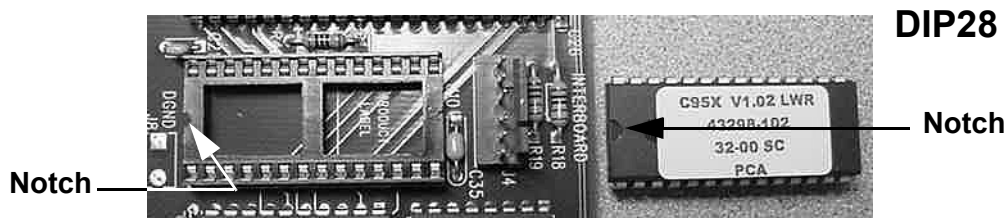
Procedure 7.15 - Replacing the PROM

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 illustrators below)



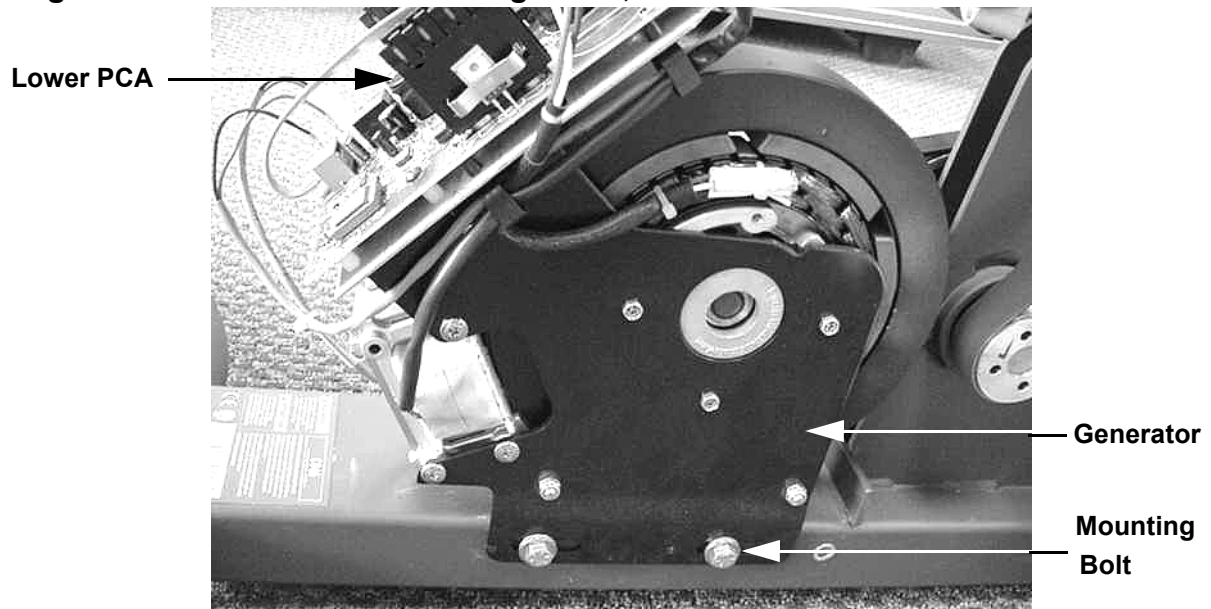
4. The IC's may inserted into their socket by hand by carefully aligning the notch on the IC with the notch on the IC socket and carefully pressing the IC into its socket. See the illustrations below for the alignment notches. Care must be taken that the IC legs on a DIP28 are all aligned in the socket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



Procedure 7.16 - Generator Replacement

1. Remove the left and right side covers.
2. Remove the positive (red) wire from the battery.
3. Remove all of the wiring from the lower PCA.
4. Loosen the secondary belt adjustment belt to remove tension from the secondary belt.
5. Remove the four generator mounting bolts. See Diagram 7.11

Diagram 7.11 - Generator Mounting C842i, C846i



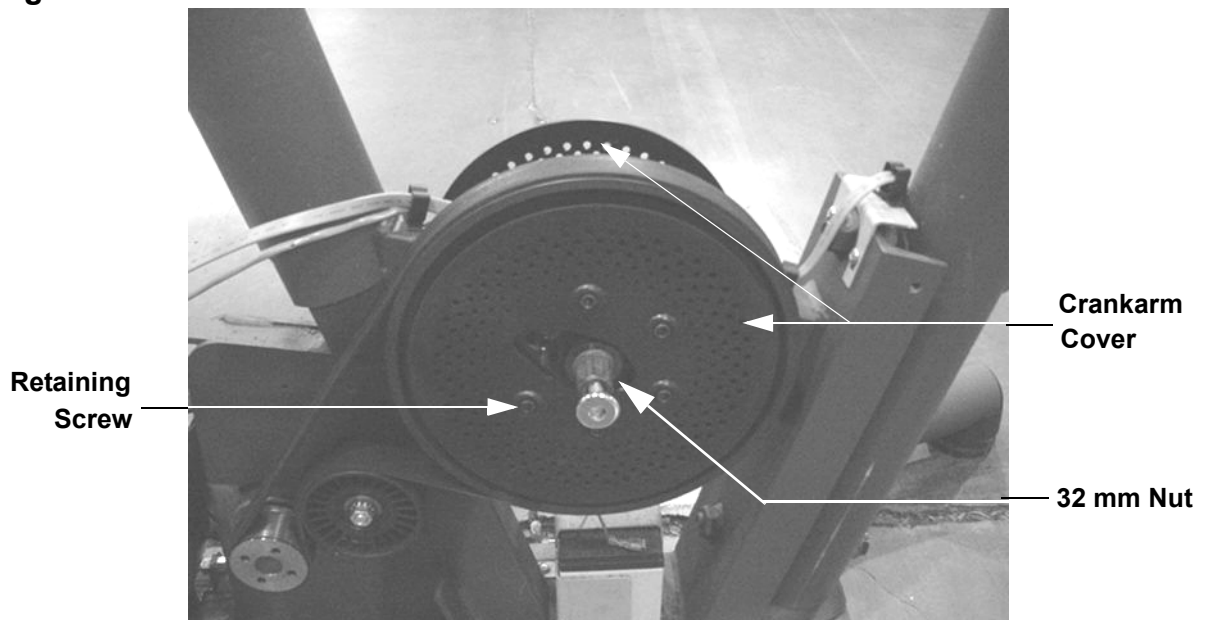
6. Remove the generator with the lower PCA from the bike.
7. Using anti-static protection, remove the four screws that fasten the lower PCA onto its mounting bracket.
8. Remove the four screws that fasten the lower PCA mounting bracket to the generator.
9. Mount the lower PCA mounting bracket on the replacement generator with the screws removed in step 8.
10. Mount the lower PCA on the mounting bracket with the screws removed in step 7.

11. Refer to Diagram 6.2 and replace the lower PCA wiring as follows. Connect the wires from the external power jack to connector J4 on the lower PCA. Connect the two red wires from the eddy current magnet to terminals M1 and M2 of the lower PCA (it does not matter which red wire goes on terminal M1 or M2). Connect the red wire from the generator to terminal M3, connect the black wire from the generator to terminal M4 and the white wire from the generator to terminal M5. Connect the interconnect cable to connector J2 on the lower PCA. Connect the black wire from the battery to terminal M7 and the red wire to terminal M6 of the lower PCA.
12. Reconnect the red battery wire to the positive terminal of the battery.
13. Replace the left and right side covers

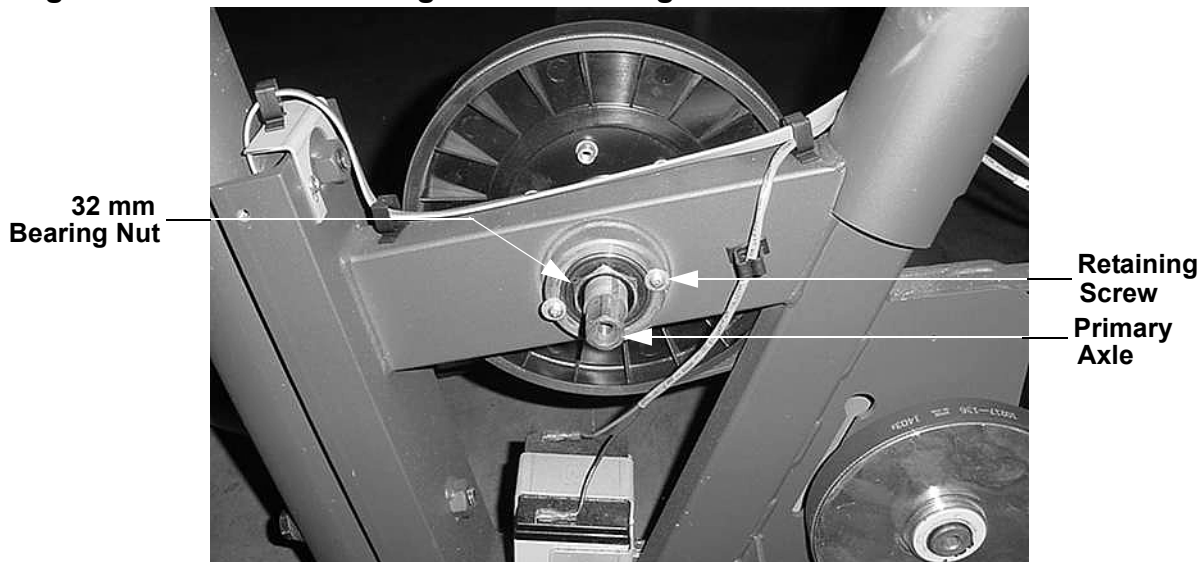
Procedure 7.17 - Primary Axle or Bearing Replacement

1. Remove the left and right side covers.
2. Remove both the left and right hand pedals. Refer to Procedure 7.2.
3. Remove the screws that retain both the left and right hand crankarm covers. Remove both of the crankarm covers. See Diagram 7.12.

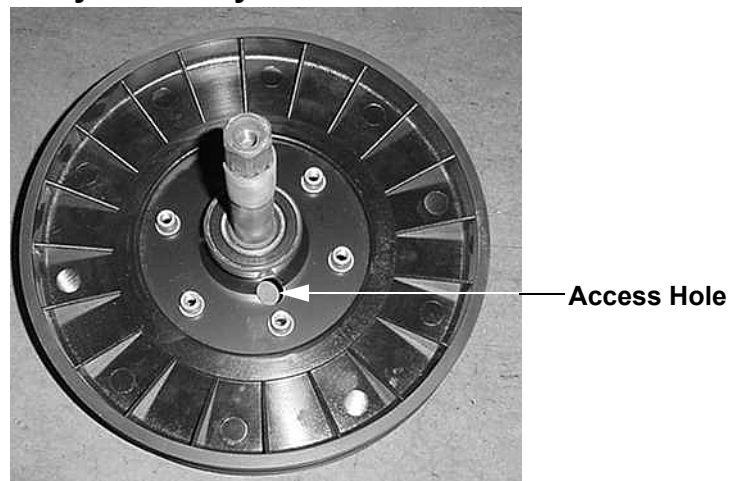
Diagram 7.12 - Crankarm Covers



4. Remove the 32 mm nut from the left side of the primary axle. See Diagram 7.12.
5. Remove the two screws retaining the outer bearing race of the left hand bearing. See Diagram 7.13. The right hand bearing has two retaining screws like the screws just removed from the left hand bearing. It is necessary to rotate the primary pulley until the access hole in the primary pulley aligns with the retaining screw. See Diagram 7.33. Remove both retaining screws from the right hand bearing.
6. Loosen but do not remove the locknut retaining the idler pulley. See Diagram 7.23. This will remove tension from the primary belt. Remove the primary belt.
7. The right hand bearing is equipped with a integral 32 mm nut. Remove the left hand bearing by threading the 32 mm bearing nut off of the primary axle. See Diagram 7.14. Use a rubber mallet to tap on the left end of the primary axle to remove the primary axle from the frame. If necessary remove the left hand bearing from its bearing pocket.

Diagram 7.13 - Outer Bearing Race Retaining Screws

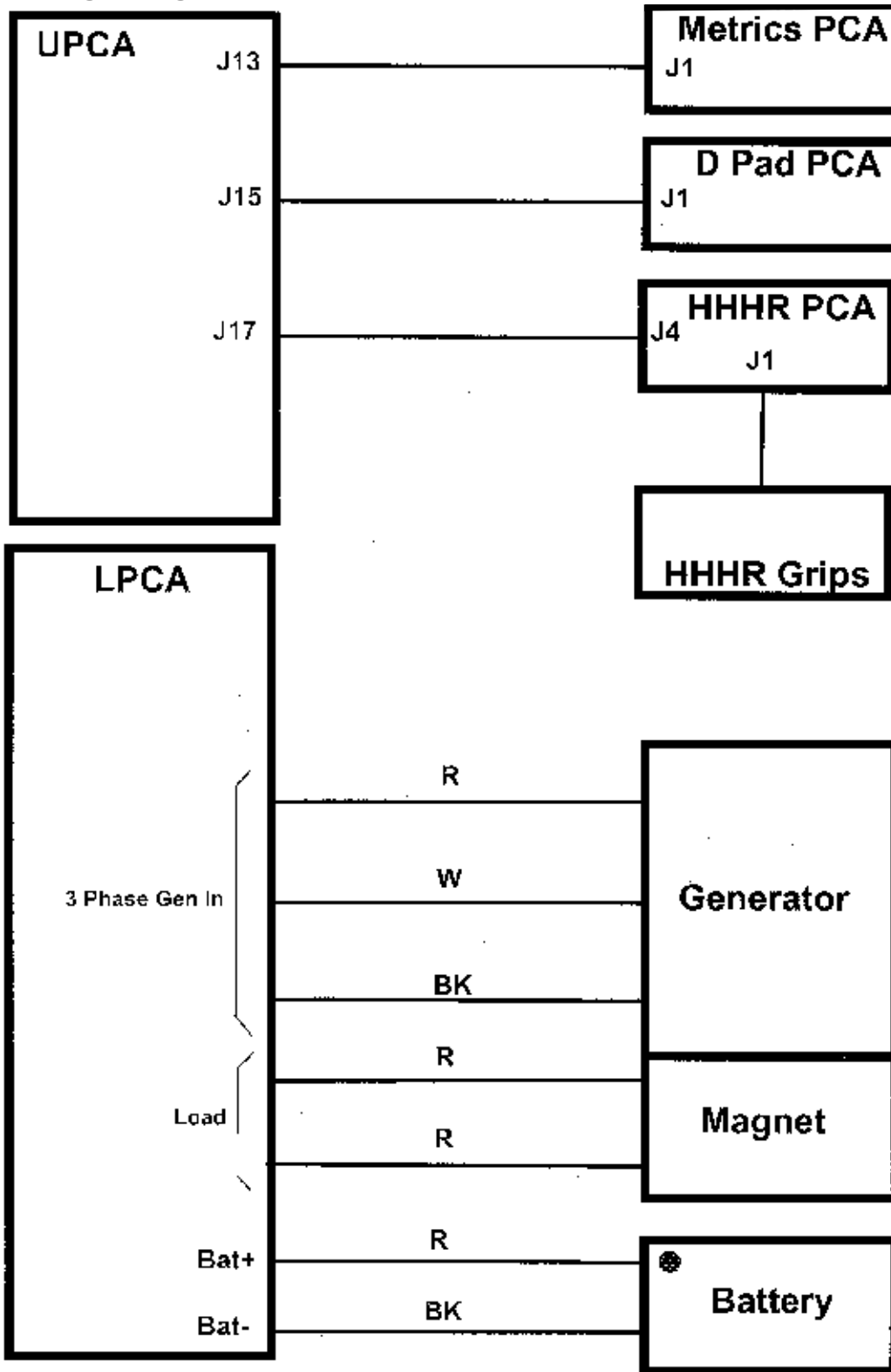
8. Carefully, clean both bearing pockets with a clean dry cloth. You may apply a thin coat of lubricant to the bearing pockets to facilitate re-installation of the bearings.
9. If the left hand bearing requires replacement, replace it with Precor part number 45441-103. The right hand bearing is part of the primary pulley assembly. If the right hand bearing requires replacement, replace Precor part number 45439-102 primary pulley assembly. See Diagram 7.14.

Diagram 7.14 - Primary Pulley Assembly

10. Slide the primary pulley assembly into the frame from the right hand side. Slide the left hand bearing over the primary axle and hand thread the bearing nut onto the primary axle. When you are sure the bearing nut is properly threading onto the primary axle, not cross-threading, torque the bearing nut to 60 inch-pounds.
11. Replace and tighten the right hand and left hand outer bearing race retaining screws removed in step 5.

12. Thread the 32 mm nut, removed in step 4, onto the left side of the primary axle and torque it 60 inch-pounds.
13. Route the primary belt around the primary pulley, over the idler pulley and around the secondary axle as shown in Diagram 7.9.
14. Tension the primary belt per Procedure 5.1.
15. Replace the crankarm covers and fasten them with the hardware removed in step 3.
16. Replace both the left and right hand pedals. Refer to Procedure 7.2.
17. Replace both covers and thoroughly test the bicycle per Section 4

Wiring Diagram 8.1 - C842i, C846i



Block Diagram 8.2 - C842i, C846i

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