C762, C764, C764i Stairclimber

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.

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Section One - Things You Should Know

About This Manual

This manual is written for you, the C760 Series Climber service technician. The objective of this service manual is to provide you with the instructions you need to maintain, inspect and adjust C760 Series Climbers, troubleshoot malfunctions, and remove and replace components. This manual includes the sections and appendices described in the following paragraphs.

Section One, Things You Should Know. This section includes warning and caution statements, safety guidelines, and a list of required tools and equipment. It is highly recommended that you read this section, as well as the *C764/C762 Climber Owner's Manual*, before performing the maintenance procedures provided in this manual.

Section Two, Software Features. The C760 Series Climbers are programmed with several diagnostic and setup features. This section contains the procedures you need to access these features.

Section Three, Preventive Maintenance. This section provides regular (scheduled) maintenance activities that should be performed to keep the C760 Series Climbers in peak condition.

Section Four, Checking Unit Operation. This procedure provides you with a quick way of checking the climber operation. Check the climber operation at the end of a maintenance procedure and when it is necessary to ensure that the climber is operating properly.

Section Five, Inspection and Adjustment Procedures. Perform inspection procedures when a trouble symptom points to a particular problem and after removing and replacing major components. Many maintenance problems can be fixed by adjusting various climber components. This section provides you with the step-by-step procedures required to make these adjustments.

Section Six, Troubleshooting Procedures. The diagnostic and troubleshooting procedures contained in this section should be performed when it is necessary to isolate a problem to a particular component.

Section Seven, Replacement Procedures. When a C760 Series Climber component must be replaced, go to this section and follow the step by step instructions required to remove and replace the malfunctioning component.

General Information

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

Miscellaneous Information

Right, Left, Front, and Back Conventions

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

Anti-Static Handling Procedures

The C760 Series Climbers contain some static-sensitive devices. Wrist straps dissipate static before it can damage static-sensitive devices you are servicing. Use anti-static handling procedures and wear an anti-static device (such as a wrist strap) when you perform this procedure. Anti-static kits can be ordered from Precor Customer Service (Precor part number 20024-101).

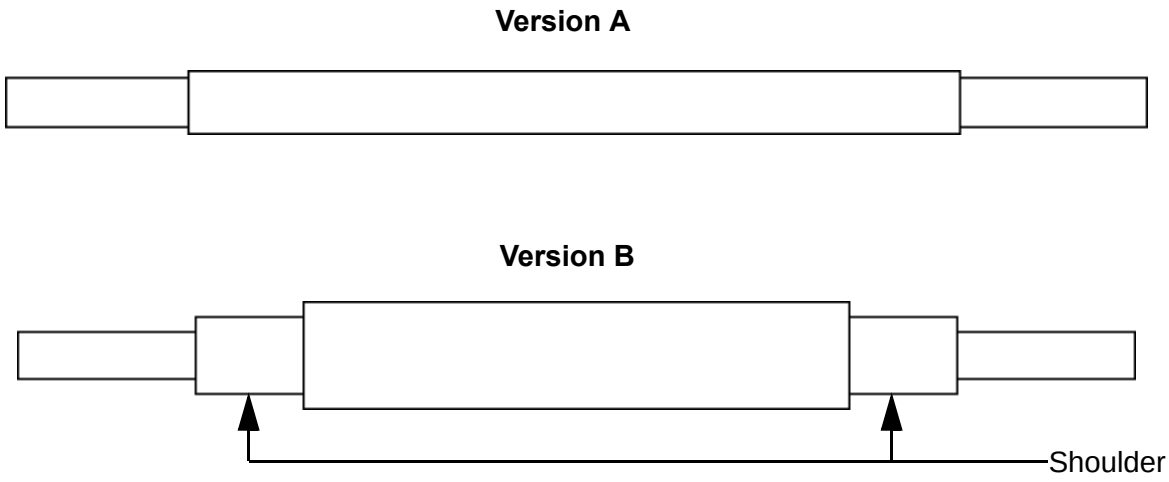
Wrist straps are made for static control.They will neither reduce or increase the risk of electrical shock when using or working on electrical equipment. When you wear a wrist strap, follow the same precautions you would use if you were not wearing a wrist strap.

Diagram 1.1 - C762, C764 Stairclimber

Version A and Version B Disk Assemblies

Diagram 1-2 shows the Version A and Version B disk assembly shafts. The Version B disk assembly shaft has shoulders, the Version A disk assembly shaft does not. The Version A and Version B disk assemblies are interchangeable. The part number for the Version A disk assembly is 36020-101. 36020-102 is the part number for the Version B disk assembly.

Diagram 1.2 - Version A & B Disk Assembly Shafts



Warning, Caution Statements and Safety Guidelines

WARNING and **Caution** statements are used throughout this manual to protect both you and the C760 Series Climber. Additional precautions and guidelines are provided to ensure your safety when servicing an C760 Series Climber.

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

- To remove power from the C760 Series Climber, the power cord must be disconnected from the wall outlet.
- Removing the covers exposes potentially dangerous machinery and high voltage components. Use caution when performing maintenance operations with the covers off.
- While performing this procedure, you will be very close to high voltage components. Protect yourself by removing jewelry (especially from ears, neck, and hands), tying up long hair, and removing neck ties.
- If the climber is left in Calibration Mode for over 30 minutes, the magnet will become very hot and the lower PCA may fail. Allow the magnet to cool by removing power from the climber and waiting four hours with the covers off before you perform maintenance operations or operate the climber.
- If the user's heart rate has reached or exceeded the maximum heart rate. The user MUST consult a physician before operating the C760 Series Climber.

Caution statements are intended to prevent damage to the C760 Series Climber as a result of the current activity. Caution statements included in this manual are listed below:

- Remove power from the climber before you measure the resistance of the magnet.
- Notice the orientation notch on the PROM (U3). The new PROM must be positioned with the same notch orientation. Replacing the PROM backwards will damage or destroy the PROM.
- Insert the new PROM carefully. Take care not to bend the legs of the PROM.

Safety guidelines you should know and follow include:

- Read the Owner's Manual and follow all operating instructions.
- Operate C760 Series Climbers on a solid, level, dry surface.
- Visually check the C760 Series Climber before beginning service or maintenance operations. If the climber is not completely assembled or if it is damaged, exercise extreme caution while operating and checking the C760 Series Climber.

- Be aware that the weight limit for the C760 Series Climber is 350 pounds.
- Keep all electrical components, such as the power cord and the ON/OFF switch, away from water and other liquids.

Required Tools and Equipment

The following list is a summary of the tools and equipment required by the procedures in this manual. We recommend that you have this equipment available when you service C760 Series Climbers.

TOOLS

#2 phillips screwdriver
#2 flat-head screwdriver

1/8”, 5/32”, and 3/16” allen wrenches

3/8”, 7/16”, 1/2” (2), 3/4”, and 17mm (2) open end wrenches

1/2” drive socket wrench set
chip puller
feeler gauge (0.030")
feeler gauge (0.050")
needle nose pliers
pliers
snap ring pliers

EQUIPMENT

anti-static wrist strap
ohmmeter
voltmeter

blue loctite
cable ties
damp cloth
mild detergent
tape

Eddy Current Resistance and the C760 Series Climber

Magnetism

When the disk rotates, it “cuts” the lines of force that make up the magnetic field. As the lines of force are cut, voltage is induced in the disk. The current produced by this induced voltage is called eddy current.

How Eddy Current Works

Current flowing through a conductor produces a magnetic field. When the disk rotates, the magnetic field produced by the eddy current in the disk opposes the magnetic field produced by the magnet. Opposing magnetic fields repel each other like poles of a magnet repel each other. This repelling action produces the resistance the user works against when operating the C760 Series Climber.

Increasing the Resistance

When the user presses the **WORK LEVEL ▼** key, the current flowing through the magnets increases. The increase in current increases the strength of the magnetic field. The disk cuts more lines of force in the magnetic field and a greater voltage is induced on the disk. Because current is proportional to voltage, the eddy current increases as well.

When the eddy current increases, the magnetic field produced by the eddy current increases and opposes the magnetic field produced by the magnet with more strength. Because the two fields are repelling more strongly, the resistance of the climber increases, thus allowing the user’s speed to decrease.

Decreasing the Resistance

When the user presses the **WORK LEVEL ▲** key, the current flowing through the magnet decreases, causing the strength of the magnetic field to decrease as well.

As the disk rotates and cuts fewer lines of force in the magnetic field, a smaller voltage is induced on the disk. As the voltage decreases, the eddy current also decreases.

When the eddy current decreases, the magnetic field produced by the eddy current decreases and opposes the magnetic field produced by the magnet with less strength. Because the two fields are repelling less strongly, the resistance of the climber decreases and the user’s speed increases.

Procedure 2.1 - Determining Software Version and Total Floors Climbed

Software version numbers are invaluable for tracking and identifying problems and staying aware of changes to the operation and features of the product. Units manufactured after May 28, 2000 (software version 6.20) Utilize standard access codes. See Diagrams 2.1 and 2.2 for key number assignments.

Procedure

1. Plug the power cord into the wall outlet, then turn on the climber with the ON/OFF switch.

2. On units manufactured prior to May 29, 2000, at the **PRESS ENTER FOR PROGRAMS** prompt, press the **WORK LEVEL ▲** and **WORK LEVEL ▼** keys simultaneously. The C762 display is shown in Diagram 2.1 and the C764 display is shown in Diagram 2.2

3. On units manufactured after May 28, 2000, press keys **RESET, 6,5**, sequentially. The C762 display is shown in Diagram 2.1 and the C764 display is shown in Diagram 2.2

4. The version number of the PROM is displayed in the upper right alpha-numeric display.

5. Press and release the **ENTER** key. The total number of floors is displayed in the upper right alpha-numeric display.

6. Press the **RESET** or **ENTER** key to return to the **PRESS ENTER FOR PROGRAMS** prompt.

Note:
If you cannot determine the software version number in this manner, look at the PROM (U8) mounted on the upper PCA. A label on U8 indicates the software version number.

Diagram 2.1 - C762 Stairclimber Display

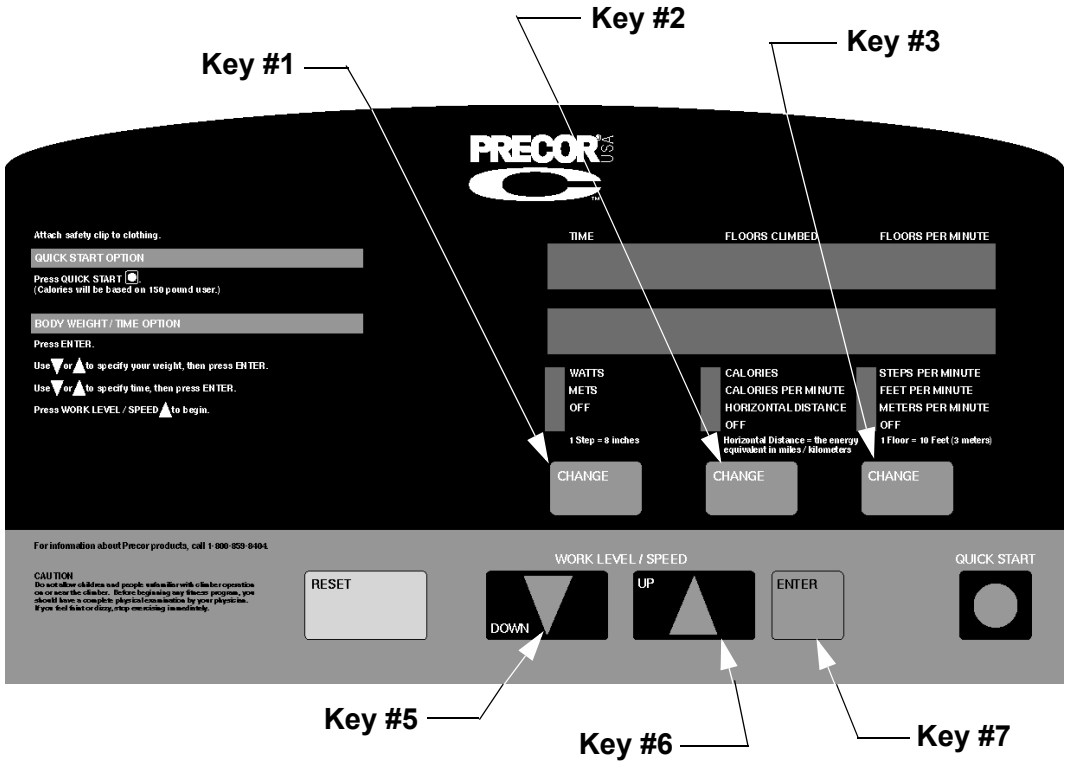
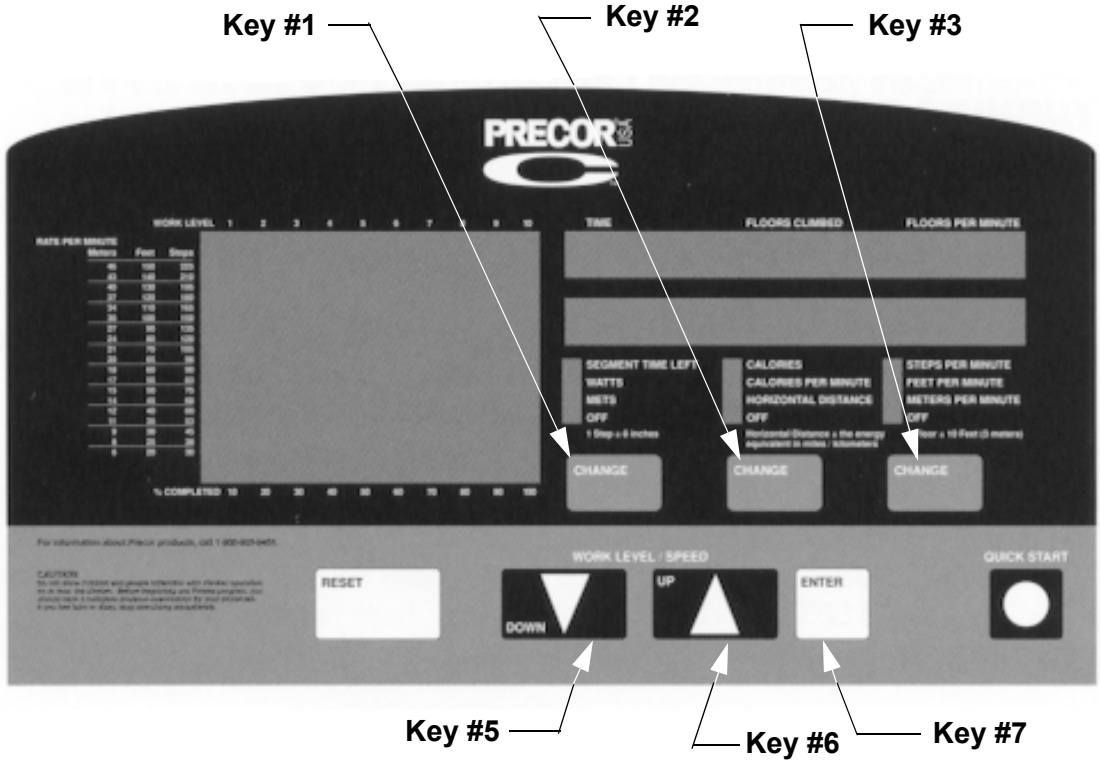


Diagram 2.2 - C764 Stairclimber Display



Procedure 2.2 - Performing Keypad and Display Diagnostics

Procedure

1. Plug the power cord into the wall outlet, then turn on the climber with the ON/OFF switch.

2. Units manufactured after May 28, 2000 (software version 6.20) Utilize standard access codes. See Diagrams 2.1 and 2.2 for key number assignments.

3. On units manufactured prior to May 29, 2000, at the **PRESS ENTER FOR PROGRAMS** prompt, press and hold the **ENTER** key, then press the **WORK LEVEL ▲** key until the **DISPLAY TEST** message is displayed. The C762 display is shown in Diagram 2.1 and the C764 display is shown in Diagram 2.2.

4. On units manufactured after may 28, 2000, press keys **RESET, 5,1,7,6,5,7,6,1,** sequentially. The C762 display is shown in Diagram 2.1 and the C764 display is shown in Diagram 2.2.

5. Watch the electronic console as the display test progresses. This test is programmed to display the following LED illumination sequences:

   a. A vertical line and then a horizontal line scrolls across the left LED matrix.

   b. The display segments on each right side alpha-numeric illuminate simultaneously for each digit.

   c. The LEDs to the left of the first column of functions illuminate, followed by the LEDs to the second and third column.

4. If the appropriate sections of the electronic console illuminate as described in the previous step**...**

THEN...	**OTHERWISE...**
The display test is successful; continue with the next step.	Replace the upper PCA as described in Procedure 7.2.

5. The display will indicate whether heart rate is or is not installed. Press **ENTER** to continue.

6. When the **NO KEYS** message is displayed on the electronic console, press each of the keys listed in the left column of Table 2.1. Verify that the message across from each function key name is displayed on the electronic console as the key is pressed.

7. If the appropriate messages are displayed on the electronic console when you press the keys listed in Table 2.1**...**

THEN...	OTHERWISE...
The keypad test is successful; continue with the next step.	Go to Step 3 of Procedure 6.2.

8. Press **RESET**. The message **KEY PRESSED PLEASE WAIT** is momentarily displayed on the electronic console. When the **PRESS ENTER FOR PROGRAMS** prompt is displayed, continue with the next step.+

Note:
The keys on the left keypad are the **RESET** keys and two hidden keys. The two hidden keys are called 'hidden key next to reset' and 'left most hidden key'.

Table 2.1 - Electronic Console Keypad Test

KEY TO BE PRESSED	MESSAGE TO BE VERIFIED
Left CHANGE Key	**CHANGE 1**
Middle CHANGE Key	**CHANGE 2**
Right CHANGE Key	**CHANGE 3**
ENTER	**ENTER**
WORK LEVEL ▼	**LEVEL DOWN**
WORK LEVEL ▲	**LEVEL UP**
QUICK START	**QUICK START**
Key to the left of **RESET** (hidden)	**HIDDEN KEY NEXT TO RESET**
Key on the far left of the console (hidden)	**LEFT MOST HIDDEN KEY**
Key on the far right of the console (hidden)	**RIGHT MOST HIDDEN KEY**

9. Press two or more keys on the left keypad. Verify that the **MULTIPLE KEYS ON LEFT KEYPAD** message is displayed on the electronic console.

10. Press two or more keys on the right keypad. Verify that the **MULTIPLE KEYS ON RT KEYPAD** message is displayed on the electronic console.

11. Press one or more keys on both the right and left keypads. Verify that the **MULTIPLE KEYS ON L AND R KEYPDS** message is displayed on the electronic console.

12. Press the **RESET** key to return to the **PRESS ENTER FOR PROGRAMS** prompt.

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

Procedure 2.3 - Selecting Club Settings

Procedure

1. Plug the power cord into the wall outlet, then turn on the climber with the ON/OFF switch.

2. Units manufactured after May 28, 2000 (software version 6.20) Utilize standard access codes. See Diagrams 2.1 and 2.2 for key number assignments.

3. On units manufactured prior to May 29, 2000, at the **PRESS ENTER FOR PROGRAMS** prompt, press and hold all three **CHANGE** keys simultaneously until the **CHOOSEUNITS [M/DN FT/UP]** prompt is displayed.

4. On units manufactured after may 28, 2000, press keys **RESET, 5,6,5,1,5,6,5,** sequentially. The C762 display is shown in Diagram 2.1 and the C764 display is shown in Diagram 2.2.

5. Press the **WORK LEVEL ▲** key to select U. S. Standard units. Press the **WORK LEVEL ▼** key to select the Metric measurement system.

6. When the **MAX WORKOUT** prompt is displayed, use the ▲ or ▼ keys to designate a workout time limit between 10 and 240 minutes. Press **ENTER** when the desired time appears. The **MODIFY CUSTOM** prompt displays.

7. If you plan to modify the custom course currently selected**...**

THEN...	**OTHERWISE...**
Press the **WORK LEVEL ▼** key; then continue with the next step.	Press the **WORK LEVEL ▲** key; then skip to Step 7.

Note:
When the **CHOOSE COURSE USE UP/DOWN OR PRESS ENTER** prompt appears, either the digit '1' or the digit '2' is displayed in the left LED matrix.

8. To change the custom course, press either the **WORK LEVEL ▲** or **WORK LEVEL ▼** key. The digit in the left LED matrix will cycle from '1' to '2' or '2' to '1'.

Note:
Instructions for designing custom courses are provided in the C760 Series Climber Owner's Manual.

9. Press the **RESET** key to return to the **PRESS ENTER FOR PROGRAMS** prompt.

Procedure 2.4 - 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 isolate 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 Customer Service.

When a problem occurs, record the following information:

- Model and serial number
- Software version number

Note:
Determine the version number of the PROM mounted on the upper PCA as described in Procedure 2.1 or by looking at the label on the PROM.

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

Section Three - Preventive Maintenance

Preventive maintenance measures are either scheduled (performed on a regular basis by the owner) or unscheduled (performed when you make a service call). Maintenance performed by the owner is limited to cleaning and visually inspecting the climber and making the adjustments specified in the C760 Series Owner's Manual. 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 C760 Series Climbers and their operating environment will keep maintenance problems and service calls to a minimum. For this reason, Precor recommends that the following preventive maintenance schedule be followed.

At the End of Each Day

- Wipe down the stair arms and frame with a damp cloth.

Every Week

- Wipe the surface of the electronic console with a barely-damp sponge or soft cloth. Dry with a clean towel.
- Vacuum underneath the climber, following these steps:

    a. Turn off the climber with the circuit breaker, then unplug the power cord from the wall outlet.

    b. Place the climber on one side (either side will do).

    c. Vacuum the rug or “damp mop” the floor.

    d. Make sure that the floor is dry before returning the climber to an upright position.

On-Site Preventive Maintenance (Service Technician)

Perform the following preventive maintenance tasks each time you are called to service a C760 Series Climber:

- Examine the belts, sheave, disk, and bearings for wear, cracks, or other signs of deterioration and replace if necessary.
- Visually inspect the power cable harness. Replace the power cable harness if it is torn or damaged.

- Check the LEDs mounted on the upper PCA and the function keys displayed on the electronic console by performing Procedure 2.2.
- Measure the gaps between the disk and the magnet assemblies as described in Procedure 5.1.

- Visually examine all wires and check connectors and wire connections. Secure connections and replace wiring as necessary.

- When the covers are removed, visually inspect the lower ribbon cable and the part of the upper ribbon cable that is not inside the column. If either ribbon cable is torn or damaged, replace it as described in Procedure 7.10.

- Inspect the stair arm and drive belts. If the belts show signs of wear or damage, remove and replace the belts as described in either Procedure 7.15 and Procedure 7.20.

Section Four - Checking Unit Operation

This section provides you with a method of checking climber operation. Check climber operation at the end of a maintenance procedure and when it is necessary to ensure that the climber is operating properly.

Procedure

1. Plug the power cord into the wall outlet, then turn on the climber by using the circuit breaker.

2. When the **PRESS ENTER FOR PROGRAMS** prompt appears, press **QUICK START**.

3. Select Work Level 1 and press **ENTER**.

4. Operate the climber 4–5 minutes. As you operate the climber:

   a. Concentrate on the resistance of the climber and the sound of the stair arm belts and return springs as you pedal. Be on the alert for unusual rubbing, hitting, grinding, or squeaking noises

   b. Press the Change keys. Verify that information such as Horizontal Distance and Steps Per Minute changes as the workout progresses.

   c. Make sure that the stair arm belts do not rub on the cover and that the cover bracket does not rub on the sheave.

5. If you feel no resistance as you step, if the climber makes unusual noises, or the electronic display does not change appropriately**...**

THEN...	**OTHERWISE...**
Refer to Section 6	Continue with the next step.

6. Press the **WORK LEVEL ▲** key until you reach Work Level 5. Operate the climber for another 2–3 minutes.

7. If the climber resistance does not change or the climber operation feels inconsistent compared with Work Level 1**...**

THEN...	**OTHERWISE...**
Refer to Section 6	Continue with the next step.

8. Press the **WORK LEVEL ▲** key until you reach Work Level 10. Operate the climber for another 2–3 minutes.

9. If the climber resistance does not change or the climber operation feels inconsistent compared with Work Levels 1 and 5**...**

THEN...	**OTHERWISE...**
Refer to Section 6.	Continue with the next step.

10. Check the LEDs mounted on the upper PCA and the function keys displayed on the electronic console by performing Procedure 2.2.

11. Turn off the climber with the circuit breaker, then unplug the power cord from the wall outlet.

Procedure 5.1 - Inspecting and Adjusting the Gaps Between the Disk and the Magnet Assemblies

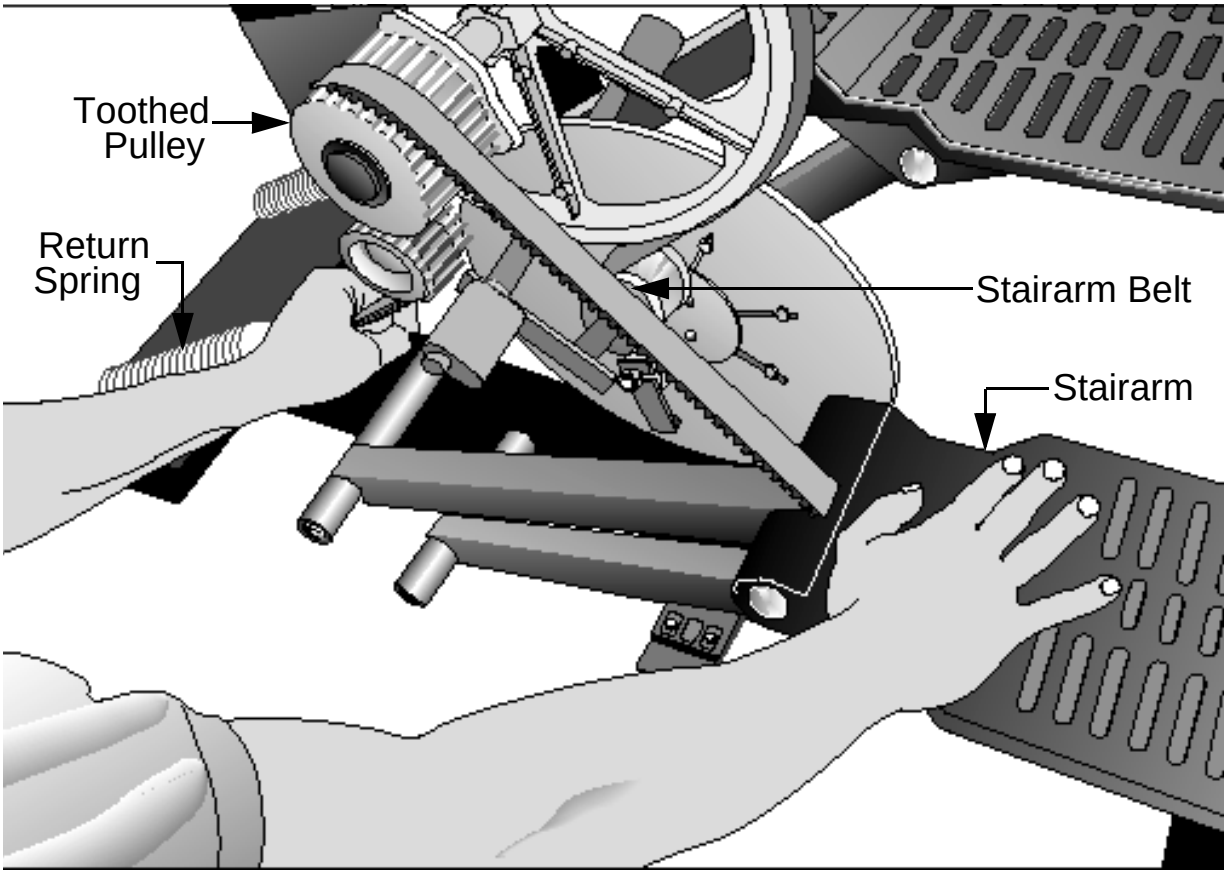
Procedure

1. Remove the covers as described in Procedure 7.1.

WARNING
Before performing maintenance operations with the covers removed, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Press down the stairarm with one hand. With your other hand, grasp and pull the end of the stairarm belt connected to the return spring. Release the stairarm. Remove the belt from the pulley and belt idler (see Diagram 5.1).

Diagram 5.1 Removing a Stairarm Belt



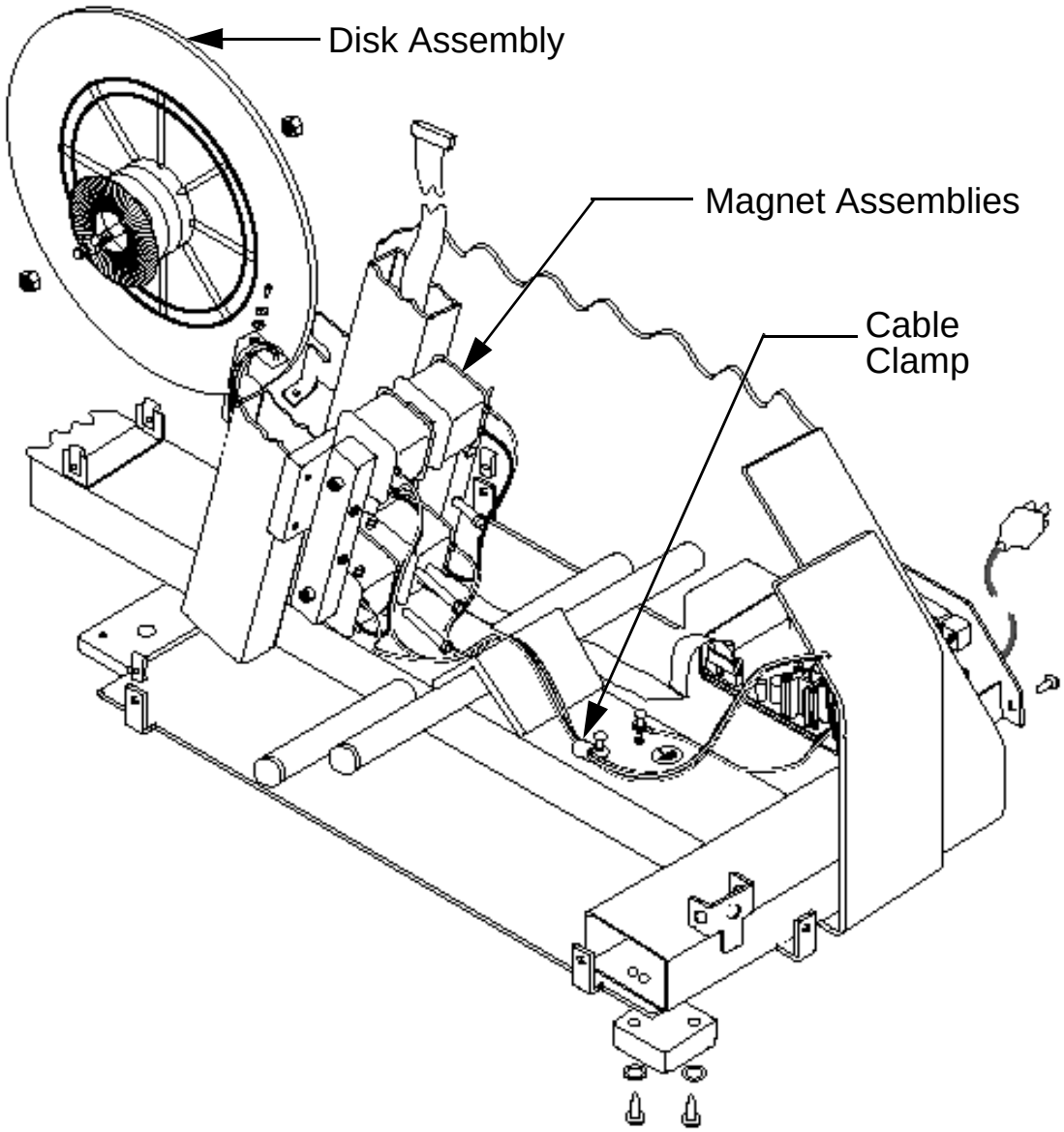
3. Place the .050 feeler gauge between the disk and the top coil on the right magnet assembly

4. If the .050 feeler gauge does not fit snugly**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 7.

5. Barely loosen the bolts, lock washers, and flat washers that secure the right magnet assembly to the climber frame (see Diagram 5.2).

Diagram 5.2 - Magnet Assemblies



Note:
Do not loosen the bolts too much. Although you must be able to move the magnet assembly

along the adjustment slots, the assembly must stay in place after it is moved.

6. Slide the top part of the magnet assembly along its adjustment slot until the .050 feeler gauge fits snugly between the disk and the top coil on the assembly.

7. Place the .050 feeler gauge between the disk and the lower coil on the right magnet assembly. Choose one:

IF...	**THEN...**
The .050 feeler gauge does not fit snugly	Continue with Step 9
The .050 feeler gauge does fit snugly and you have loosened the magnet assembly	Skip to Step 10
The .050 feeler gauge does fit snugly and you **have not loosened** the magnet assembly	Skip to Step 11

8. Slide the lower part of the magnet assembly along its adjustment slot until the .050 feeler gauge fits snugly between the disk and the lower coil on the assembly.

9. Tighten the bolts, lock washers, and flat washers that secure the right magnet assembly to the climber frame.

10. Repeat Steps 3 through 8 for the left magnet assembly, **i**f it has not already been checked.

11. Lift the stairarm assembly from the frame weldment. Grasp the stairarm belt and lift it over the toothed pulley. Route the belt under the belt idler.

12. Check the operation of the climber as described in Section Four, then replace the covers as described in Procedure 7.1.

Procedure 5.2 - Measuring the Resistance of the Magnet Assemblies

Caution
Remove power from the climber before you measure magnet resistance.

Procedure

1. Remove the covers as described in Procedure 7.1.

WARNING
Before performing maintenance operations with the covers removed, review the Warning and Caution statements listed in Section One, Things You Should Know.

2. Press down the stair arm with one hand. With your other hand, grasp and pull the end of the HTD belt connected to the return spring. Release the stair arm. Remove the belt from the pulley and belt idler (refer back to Diagram 5.1).

3. Set the ohmmeter to a range that will conveniently read 125 ohms.

Note:
The resistance of the coils will be higher than optimum (85–105 ohms) when the coils are warm. Take resistance measurements when the magnet assemblies are at room temperature.

4. Remove the wires from the two terminals on one of the coils. Measure the resistance between the two bare coil terminals.

5. If the resistance measures less than 85 ohms or more than 105 ohms**...**

THEN...	**OTHERWISE...**
Replace the magnet assembly as described in Procedure 7.13.	Connect the wires removed in the previous step; then continue with the next step.

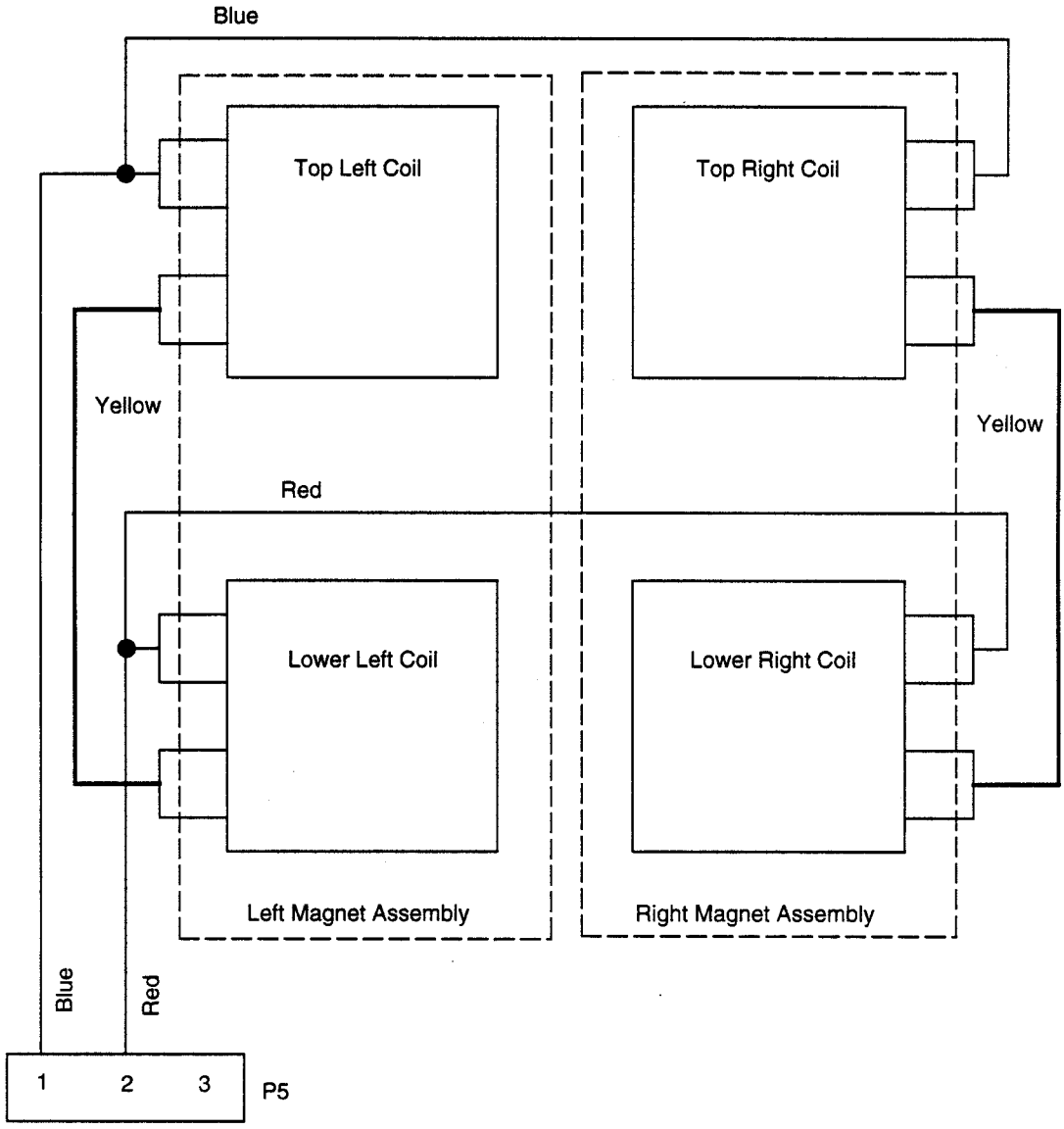
Note:

The C760 Series Climber magnet cable assembly is shown in Diagram 5.3.

6. Repeat Steps 4 and 5 for the remaining three coils on the climber.

7. Check the operation of the climber as described in Section Four, then replace the covers as described in Procedure 7.1.

Diagram 5.3 - Magnet Wiring



Procedure 6.1 - Troubleshooting the Lower and Upper Ribbon Cables

Fault Isolating the Lower Ribbon Cable

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

WARNING
Before continuing with this procedure, review the Warning and Caution statements listed in Section Nothings you Should Know.

2. Using the screwdriver, remove the two screws that secure the power entry module to the climber frame. Pull the module out of the climber.

3. Disconnect the lower ribbon cable from the lower PCA.

4. Slide the enclosure collar up on the column.

5. Disconnect the lower ribbon cable from the upper ribbon cable (see Diagram 6.1).

6. Connect the spare ribbon cable between the lower PCA and the upper ribbon cable.

7. Check the operation of the climber as described in Section Four.

8. Disconnect the spare ribbon cable from the lower PCA and the upper ribbon cable.

9. If the climber operated correctly when the spare ribbon cable was installed**...**

THEN...	**OTHERWISE...**
The original lower ribbon cable is bad; install a new cable as described in Procedure 7.10.	The original lower ribbon cable is not bad; continue with the next step.

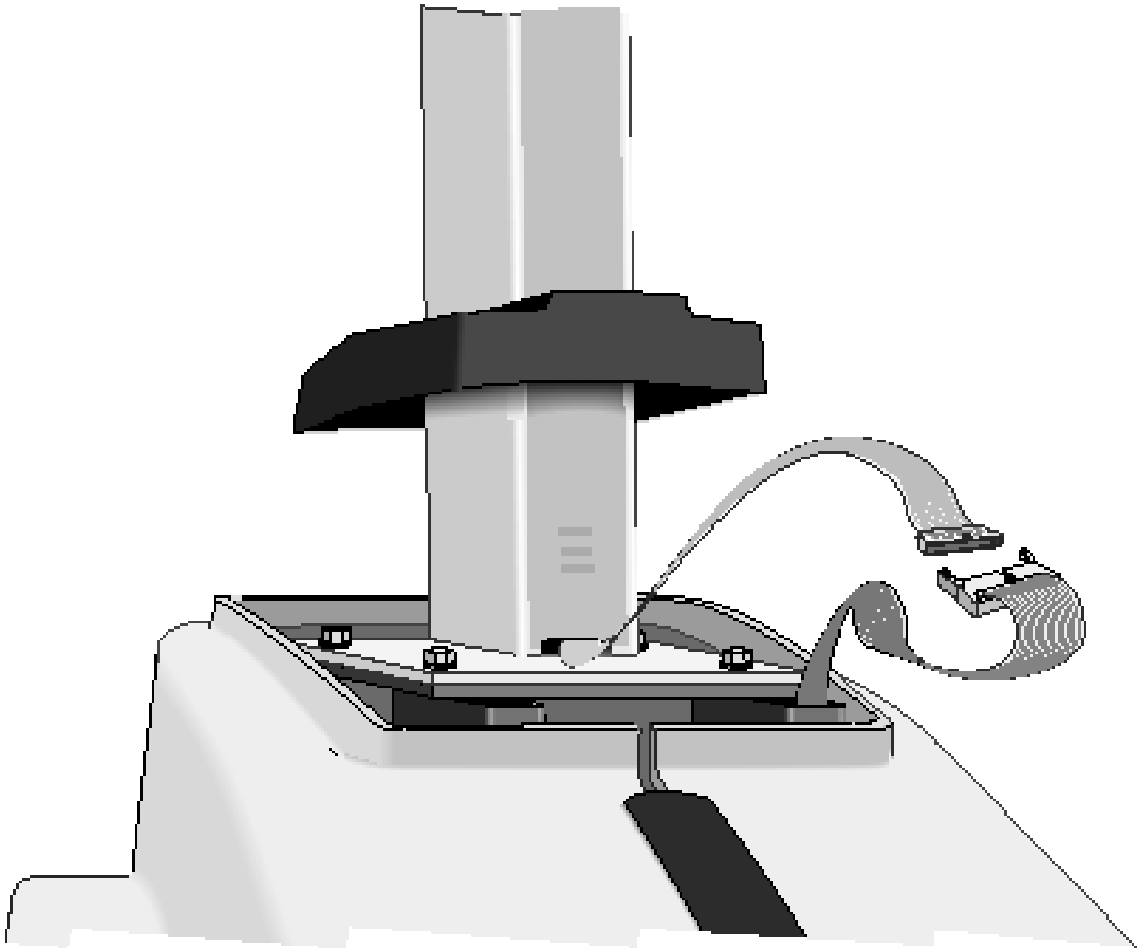
Fault Isolating the Upper Ribbon Cable

10. Remove the screws that secure the display housing to the display base plate.

11. Push each set of tabs towards the edges of the base plate as you lift the display housing.

Note:
Turn over the display housing and support it on the display base plate while you perform the following steps.

Diagram 6.1 - Upper and Lower Ribbon cables



12. Disconnect the ribbon cable from the upper PCA.
13. Connect the spare ribbon cable between the upper PCA and the lower ribbon cable connector.
14. Connect the original lower ribbon cable to the lower PCA.
15. Check the operation of the climber as described in Section Four.
16. Disconnect the spare ribbon cable from the Upper PCA and the lower ribbon cable.
17. If the climber operated correctly when the spare ribbon cable was installed**...**

THEN...	OTHERWISE...
The original upper ribbon cable is bad; install a new cable as described in Procedure 7.10.	The original upper ribbon cable is not bad; continue with the next step.

18. Support the display housing while you connect the original upper ribbon cable to the upper PCA.

19. Connect the original upper and lower ribbon cables to each other.

20. Line up the tabs on the display housing with the tab holes on the display base plate.

21. Gently press the display housing onto the display base plate until the tabs are pushed into the holes on the base plate.

22. Replace the screws that secure the display housing to the display base plate.

Note:
Gently push any excess cable into the column.

23. Slide the enclosure collar down the column and over the column mounting screws. Press down to ensure a snug fit.

24. Slide the power entry module into the climber. Using the screwdriver, install the two screws that secure the power entry module to the climber frame.

25. Check the operation of the climber as described in Section Four.

Procedure 6.2 - Troubleshooting the Keypad and Upper PCA

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

Procedure

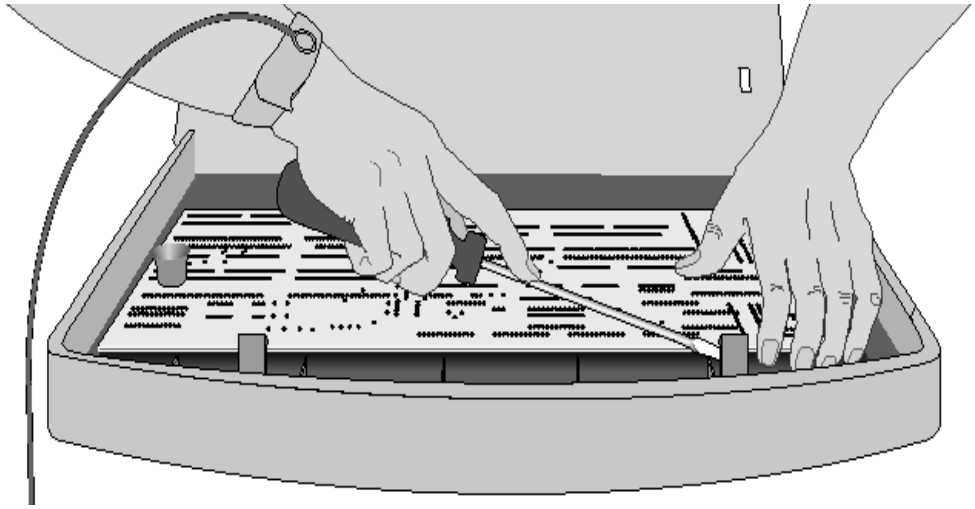
1. Set the circuit breaker in the “off” position.

WARNING
Before continuing with this procedure, review the Warning and Caution statements listed in Section One of the Residential Treadmill Service Manual.

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 the treadmill frame.

Diagram 6.2 - Removing the Upper PCA



4. Set the voltmeter to a range that will conveniently read +6 Vdc.

5. Set the circuit breaker in the “on” position.

6. Use a DVM, set for DC volts, and read between pin 5 of J4 and the each of the pins in Table 6.1 (no keys pressed) and Table 6.2 (with the appropriate key pressed)...

Diagram 6.3 - Upper PCA Component Layout

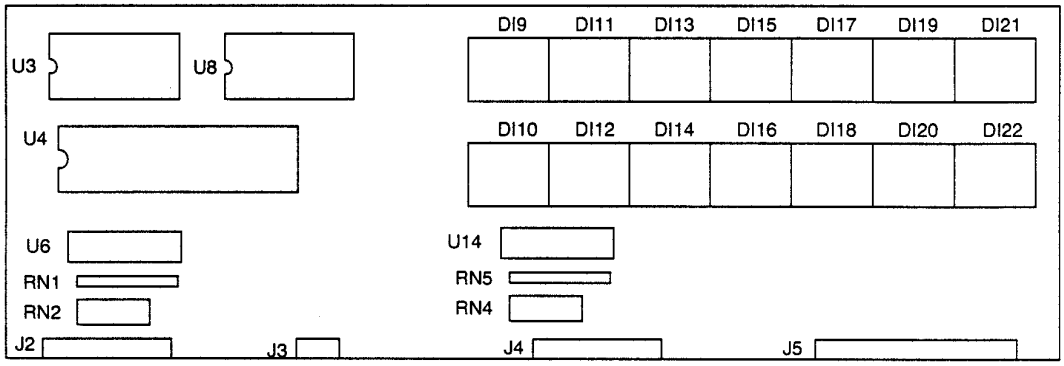


Table 6.1 - Voltage Test Points (Function Keys Not Pressed)

PLACE THE POSITIVE LEAD OF THE VOLTMETER ON...	THE VOLTMETER SHOULD READ...
Pin 1 of J4	5 Vdc ± 500 mVdc
Pin 2 of J4	5 Vdc ± 500 mVdc
Pin 3 of J4	5 Vdc ± 500 mVdc
Pin 4 of J4	5 Vdc ± 500 mVdc
Pin 6 of J4	5 Vdc ± 500 mVdc
Pin 7 of J4	5 Vdc ± 500 mVdc
Pin 8 of J4	5 Vdc ± 500 mVdc
Pin 9 of J4	5 Vdc ± 500 mVdc
Pin 4 of J2	5 Vdc ± 500 mVdc

Table 6.2 - Voltage Test Points (Function Keys Pressed)

PLACE THE POSITIVE LEAD OF THE VOLTMETER ON...	AT THE ELECTRONIC CONSOLE, PRESS...	THE VOLTMETER SHOULD READ BETWEEN...
Pin 1 of J4	Left **CHANGE** key	0 Vdc and 350 mVdc
Pin 2 of J4	**STOP** key	0 Vdc and 350 mVdc
Pin 3 of J4	**WORK LEVEL ▼** key	0 Vdc and 350 mVdc
Pin 4 of J4	**WORK LEVEL ▲** key	0 Vdc and 350 mVdc
Pin 6 of J4	**QUICK START** key	0 Vdc and 350 mVdc
Pin 7 of J4	**ENTER** key	0 Vdc and 350 mVdc
Pin 8 of J4	Right **CHANGE** key	0 Vdc and 350 mVdc
Pin 9 of J4	Center **CHANGE** key	0 Vdc and 350 mVdc
Pin 4 of J2	**RESET** key	0 Vdc and 350 mVdc

7. If the voltage readings match those listed in Tables 6.1 and 6.2 and one or more keys do not function, replace the upper PCA.

8. If the voltage readings in Table 6.1 are incorrect, disconnect the keypad cable from the key pad connector and repeat the voltage measurements in 6.1. If the voltage readings are now correct, replace the display housing (keypad). If the voltage readings are still incorrect, replace the upper PCA.

9. If the voltage readings in Table 6.1 are correct and one or more voltage readings in Table 6.2 are incorrect, replace the display housing (keypad).

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

11. If necessary, carefully re-connect the keypad cable to the keypad connector.

12. Remove the ground lead of the wrist strap from the treadmill frame, then remove the wrist strap from your arm.

13. Position the display enclosure on the display plate. Install the screws that secure the display enclosure to the display plate.

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

Procedure 6.3 - Upper Display Does Not Illuminate

Warning
Hazardous voltages will be tested in the following procedure. Exercise extreme caution when performing these procedures. Do not connect or disconnect any wiring, connectors or other components with power applied to the treadmill.

1. Disconnect the line cord from the AC wall outlet. Using an AC voltmeter, verify that the proper AC voltage is present at the wall outlet. Nominal 120 Vac may vary between approximately 105 Vac and 135 Vac. Nominal 240 Vac may vary between approximately 195 Vac and 245 Vac. If the AC voltage is missing or incorrect, check the AC service or consult an electrician.

2. Set the circuit breaker in the “off” position. Plug the treadmill’s AC line cord into the AC wall outlet. Using an AC voltmeter, check the line cord between the blue and brown wires for the appropriate AC voltage (as tested in step 1). If the AC voltage is missing or incorrect, replace the line cord.

3. Set the circuit breaker in the “on” position. Using an AC voltmeter, check between the AC input terminals of the line filter. The AC voltage should read as in step 1. If the AC voltage is missing or incorrect, replace the circuit breaker or the wiring between the circuit breaker and line filter as appropriate.

4. Using an AC voltmeter, check between the AC input terminals of the lower PCA (terminals 1 & 2 of P4). The AC voltage should read as in step 1. If the AC voltage is missing or incorrect, replace the line filter or the wiring between the circuit breaker an lower PCA, as appropriate.

5. Remove the fuse from the lower PCA. Using an ohmmeter, check the fuse for continuity. It should read 1Ω or less. If the fuse is open or reads significantly higher than 1Ω replace the fuse. If the upper display still does not illuminate continue with the next step.

6. Using an AC voltmeter, measure between terminal 4 (White) and terminal 7 (Blue) of P3. The AC voltage should read as in step 1. If the AC voltage is missing or incorrect, replace the lower PCA.

7. Using an AC voltmeter, measure between terminal 5 (Green) and terminal 6 (Yellow) of P3. The AC voltage should read approximately 12 Vac. If the voltage is missing or incorrect, replace the transformer.

8. Using an AC voltmeter, measure between terminal 1 (Red) and terminal 2 (Black) of P3. The AC voltage should read approximately 6 Vac. If the voltage is missing or incorrect, replace the transformer.

9. Refer to block diagram 8.2 and note the ribbon cable connections for “+6V” and “ground”. Set treadmill circuit breaker in the “off” position. Remove the upper PCA from the display housing. With the ribbon cable still connected, set the upper PCA on an insulated surface. Set circuit breaker in the “on” position. Using a DC voltmeter, measure the voltage between the “+6v” and “ground” connections on the ribbon cable connector on the upper PCA. The voltage should read approximately 6 Vdc ± 0.5 Vdc. If the voltage is correct, replace the upper PCA. If the voltage is missing or incorrect, continue with the next step.

10. Set the circuit breaker in the “off” position. Remove the ribbon cable from the upper PCA. Set the treadmill’s circuit breaker in the “on” position. Check the 6 Vdc voltage (as in step 5) on the ribbon cable connector. If the voltage is correct, replace the upper PCA. If the voltage is missing or incorrect, continue with step 7.

11. Set the circuit breaker in the “off” position. Remove the ribbon cable from the lower PCA. Set the treadmill’s circuit breaker in the “on” position. Check the 6 Vdc voltage (as in step 5) on the lower PCA ribbon cable connector. If the voltage is correct, replace the ribbon cable. If the voltage is missing or incorrect, replace the lower PCA.

12. If you have performed all of the above procedures and are unable to resolve the problem, contact Precor customer support.

Procedure 6.4 - No Resistance

Note:
The term resistance in this case refers to the physical opposition to the downward movement of the stairarm. That is, the greater the resistance, the slower fall rate and the lesser the resistance the faster the fall rate.

Note:
If the stairclimber is unused for 30 seconds, power is removed from the magnets. While testing the stairclimber for resistance, it is necessary to periodically move one of the stairarms to prevent the stairclimber from timing out.

1. Set the circuit breaker in the “on” position and enter the manual program. Set the work level to level 1 (maximum resistance).

2. If you stand on the stairarms, the fall rate should be slow. If the fall rate is too fast, continue to use the stairclimber and note whether a stepping rate is displayed. If the stepping rate is 0, troubleshoot the speed sensor per procedure 6.5. If a stepping greater than 0 is displayed continue with step 3.

3. Refer to Diagram 5.3 and verify that the magnets are wired exactly as shown. If any of the wiring is reversed, the resistance will be incorrect.

4. Using a voltmeter, check the voltage across any of the four magnet coils. The voltage across the magnet coil, at work level 1, should be approximately 60 Vac. Check each of the four magnet coils in this manner.

    a. If all four magnet coils have the correct voltage, repeat step 3. If you have performed all of the previous procedures and have been unable to locate the problem, contact Precor Customer Support.

    b. If one or more magnet coils have the correct voltage and one or more magnet coils have 0 Vac or very low voltage, check all of the wiring connections and wires in Diagram 5.3. Look for poor connections or open wires. If you have performed all of the previous procedures and have been unable to locate the problem, contact Precor Customer Support.

    c. If all of the magnets coils have 0 Vac or very low voltage, verify the wiring and connections between the lower PCA and the magnet coils. Look for poor connections and open wiring. If the wiring is good, continue with step 5.

5. Using a voltmeter, check the voltage between terminals 1 and 5 of P5 on the lower PCA. The voltage across the magnet coil, at work level 1, should be approximately 60 Vac. If the voltage is correct, repeat step 4c. If you have performed all of the previous procedures and are unable to locate the problem, contact Precor Customer Support.

5. If the voltage in step 4 is 0 Vac or very low, check that the three light emitting diodes on the lower PCA are lit. If the display is illuminated and one of the three LED's is not lit, replace the lower PCA.

5. If the display is not illuminated, go to procedure 6.3.

6. If you have performed all of the previous procedures and are unable to locate the problem, contact Precor Customer Support.

Procedure 6.5 - Troubleshooting the Speed Sensor

Note:
If the stairclimber is unused for 30 seconds, power is removed from the magnets. The stairclimber senses that it is being used by monitoring the speed sensor output.

1. Set the circuit breaker in the “on” position and enter the manual program.

2. Using a voltmeter, measure the voltage between the orange and brown wires on the speed sensor. The voltage should be approximately 12 Vdc. If the voltage is 0 Vdc or very low, go to step 4, otherwise continue with step 3.

3. Using a voltmeter, measure the voltage between the blue and brown wires on the speed sensor. Slowly rotate the disc assembly by hand, the voltage should alternate between approximately 12 Vdc and 0.5 Vdc. If the voltage is good, skip to step 5.

4. Perform the voltage measurements in steps 2 and 3 on the orange, blue and brown wires on connector P2 of the lower board.

    a. If both voltages are good, check the wiring and connections between connector P2 of the lower board and the speed sensor. If the wiring and connections are good, go to step 5.

    b. If the voltage in step 2 is 0 Vdc or very low, disconnect the P2 connector and recheck the voltage on terminals 1 and 4 of P2 on the lower board. If the voltage is correct, replace the speed sensor. If the voltage is still 0 Vdc or very low, replace the lower PCA. If you have performed all of the previous procedures and have been unable to locate the problem, contact Precor Customer Support.

5. At this point the voltages at the speed sensor and at the P2 connector of the lower board are correct but a stepping rate is not displayed when the stairclimber is used. There are three possible parts that could cause these symptoms. They are the lower PCA, lower ribbon cable, upper ribbon cable and upper PCA. The easiest method of determining which part is bad is to substitute a known good part. Substitute one part at a time and replace the original part if the replacement does not correct the problem.

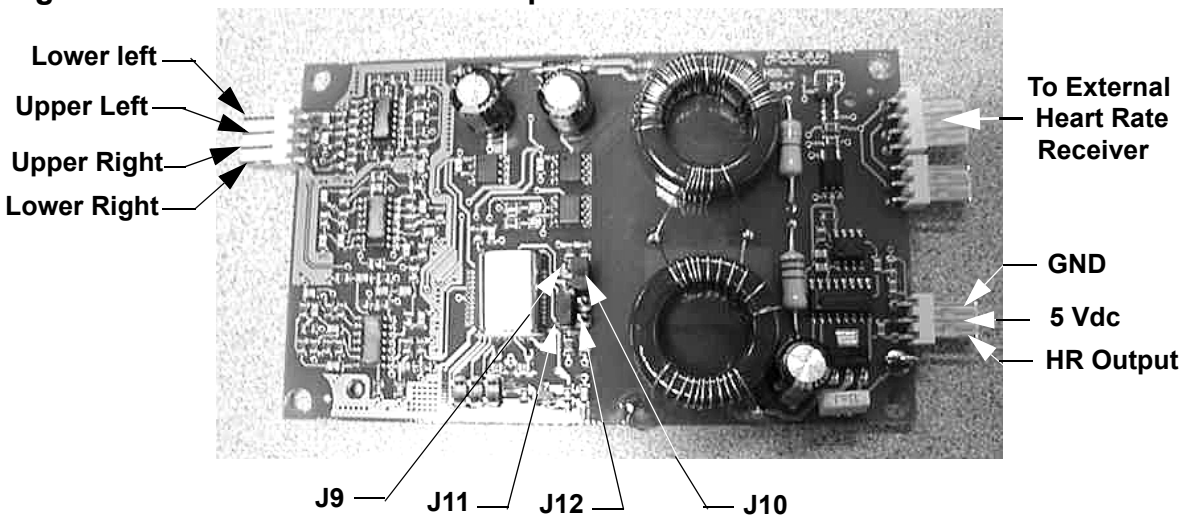
6. If you have performed all of the previous procedures and are unable to locate the problem, contact Precor Customer Support.

Procedure 6.6 - Troubleshooting Hand Held Heart Rate

Circuit Description
The hand held heart rate system is actually a dual system, that is, it can accept a Polar heart rate signal from either the hand held heart rate contacts on the unit's handlebar or from a heart rate chest strap transmitter. Refer to Diagram 6.4 and verify the J9, J10, J11 and J12 jumper settings. J10 and J11 should be jumpered. J9 and J12 should be open (as shown in Diagram 6.4). This jumper configuration sets the PCA for hand held priority. That is, if both a hand held and chest strap heart rate signal are being recieved, the system will accept the hand held signal and ignore the chest strap signal. If a hand held signal is not being received, the system will accept the chest strap signal. This system uses a wireless (chest strap) receiver that is external of the heart rate PCA.

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

Diagram 6.4 - Hand held/chest strap heart rate PCA



Normal hand held reading - No chest strap reading

1. Set the on/off switch in the "off" position. Remove the upper display housing. Temporarily remove the jumper from J10. This changes the system to chest strap priority.

2. Set the on/off switch in the "on" position and access the diagnostic program (Procedure 2.2). Advance to the heart rate display portion of the diagnostic program. Verify that a chest strap signal is not being accepted with either a heart rate test transmitter or a chest strap transmitter.

3. if a hand held signal is being accepted and a chest strap signal is not being accepted, verify that the chest strap is good by testing it with a heart rate test receiver. If the chest strap is good, replace the external chest strap receiver. If the heart rate test receiver does not accept a signal from the chest strap, replace the chest strap.

4. Replace the jumper on J10 (removed in step 1).

No hand held reading - Normal chest strap reading

5. Set the on/off switch in the “on” position and access the diagnostic program (Procedure 2.2). 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.

6. If a hand held heart rate signal was not received in step 5, grasp 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 8.

7. If a hand held signal was accepted in step 6, the hand held contact wiring (in the handlebar) 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. I necessary, rewire the hand held contacts as described above and test as described in step 5.

8. Set the on/off switch in the “off” position. Refer to Diagram 6.4 for the following measurements. With an ohmmeter measure between the “lower right contact” pin on the J1 connector and the lower right hand held heart rate contact on the handlebar. The reading should be 1 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

9. Set the on/off switch in the “on” position and access the diagnostic program (Procedure 2.2). 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.

10. Check the plug/connector connections on both the heart rate PCA (J2), and upper PCA (J5).

11. If neither a chest strap signal or a hand held signal is being accepted, measure between the “ground” and “5 Vdc” pins on J2 for 5 Vdc. If 5 Vdc is present, replace the heart rate PCA.

12. If 5 Vdc is not present, remove the connector from J2 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

13. Verify that a ferrite core is clamped around the heart rate PCA to upper PCA cable.

14. 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.

15. Temporarily, disconnect the external heart rate receiver from the heart rate PCA. Set the on/off switch in the “on” position and repeat the procedure in step 5.

16. 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.

17. 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.

18. Set the on/off switch in the “off” position, and replace the external heartbrate receiver to 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 5.

Procedure 7.1 - Replacing the Covers

Removing the Covers

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

2. Slide the collar up on the column.

3. Choose one:

IF...	**THEN...**
You are removing the left cover	Remove the screws that secure the power entry module to the climber frame. Pull the module out of the climber, then continue with the next step.
You are removing the right cover only	Continue with the next step

4. Loosen the fastener that secures the top of the cover to the climber frame. Loosen both screws if you are going to remove both covers.

Note:
The two screws above the pedals secure the covers to the cover bracket (see Diagram 7.1). When you remove a cover, always remove only one of the screws. Leave the cover bracket attached to the last cover removed.

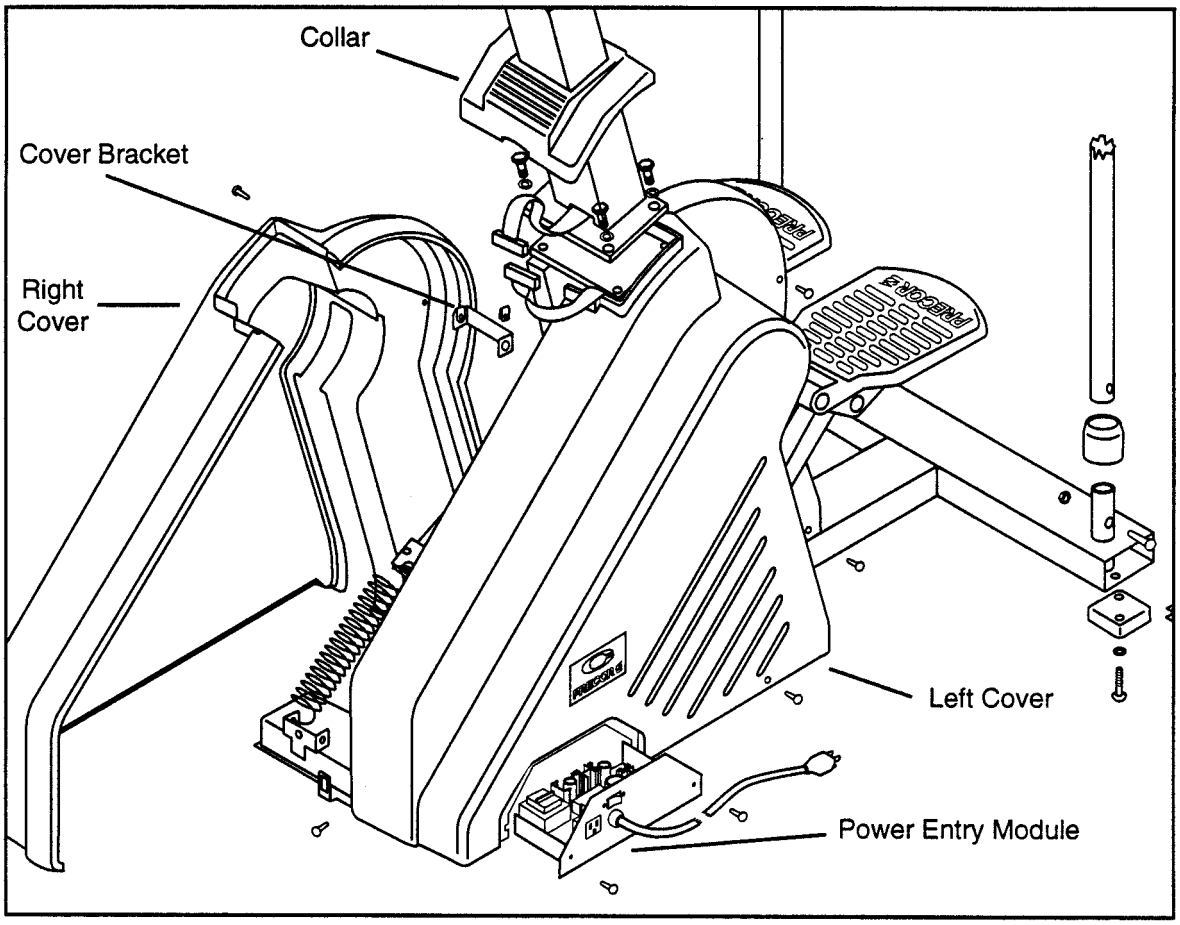
5. Remove the screws that secure the cover to the climber frame. Set the cover aside until maintenance operations are complete.

6. Remove the front and back cover seals.

7. If you are removing both covers**...**

THEN...	**OTHERWISE...**
Repeat Step 5 for the second cover; then continue with the next step.	Continue with the next step.

Diagram 7.1 - Cover Mounting



Replacing the Covers

When you replace the covers, install the screw on the cover bracket first.

8. Choose one:

IF...	THEN...
You are replacing the left cover	Continue with the next step
You are replacing the right cover only	Skip to Step 12

9. Position the left cover against the climber frame.

Note:
Take care not to pinch the cables when you perform the next step.

10. Push the power entry module into the climber. Install the screws that secure the power entry module to the climber frame.

11. Install the screws that secure the left cover to the climber frame.

12. Position the right cover against the climber frame; install the screws that secure the right cover to the climber frame.

13. Tighten the fasteners that secure the top of the cover to the climber frame. Tighten both screws if you removed both covers.

14. Position the front cover seal so that it overlaps the edges of both the right and left covers. Press the strip firmly into place. Repeat this step for the rear cover seal.

15. Slide the collar down the column and over the column mounting screws. Press down to ensure a snug fit.

16. Plug the power cord into the wall outlet, then turn on the climber with the circuit breaker.

17. Operate the climber 1–2 minutes. As you operate the climber, make sure that the stairarm belts do not rub against the cover and that the cover bracket does not rub on the sheave. Adjust the position of the stairarm belts or cover bracket if necessary.

Procedure 7.2 - Replacing the Upper PCA

Use anti-static handling procedures and wear an anti-static device (such as a wrist strap) when you perform this procedure. Anti-static kits can be ordered from Precor Customer Service (Precor part number 20024-101).

Removing the Upper PCA

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

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

2. Remove the screws that secure the display housing to the display base plate.

3. Push each set of tabs toward the edges of the base plate as you lift the display housing.

Note:
Turn over the display housing and support it on the display base plate while you perform the following steps.

4. Attach the wrist strap to your arm, then connect the ground lead of the wrist strap to a metal section of the climber frame.

5. Disconnect the upper ribbon cable from the upper PCA.

CAUTION
Be careful not to damage the upper PCA when you remove it from the display housing tabs.

6. Release the upper PCA from the plastic mounting tabs (see Diagram 7.2). Remove the upper PCA from the display housing.

7. Carefully disconnect the keypads from the upper PCA.

8. If you removed the upper PCA because it is malfunctioning**...**

THEN...	**OTHERWISE...**
Set aside the upper PCA for eventual shipment to Precor; then continue with the next step.	Continue with the next step.

Replacing the Upper PCA

9. Carefully connect the keypads to the upper PCA.

10. Position the upper PCA over the plastic mounting tabs on the display housing.

11. Push the upper PCA onto the plastic mounting tabs. Press down the upper PCA until the edge of the PCA is held by the tabs.

12. Connect the upper ribbon cable to the upper PCA.

13. Remove the ground lead of the wrist strap from the climber frame, then remove the wrist strap from your arm.

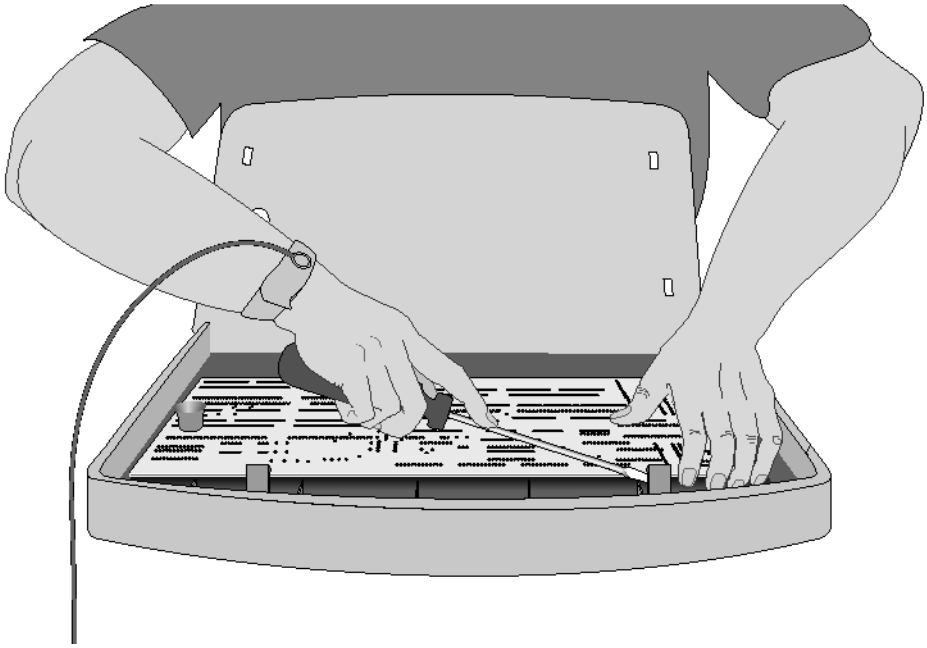
14. Line up the tabs on the display housing with the holes on the display base plate.

15. Gently press the display housing onto the base plate until the tabs are pushed into the holes.

16. Replace the screws that secure the display housing to the display base plate.

17. Check the operation of the climber as described in Section Four, Checking Unit Operation.

Diagram 7.2 - Removing the Upper PCA



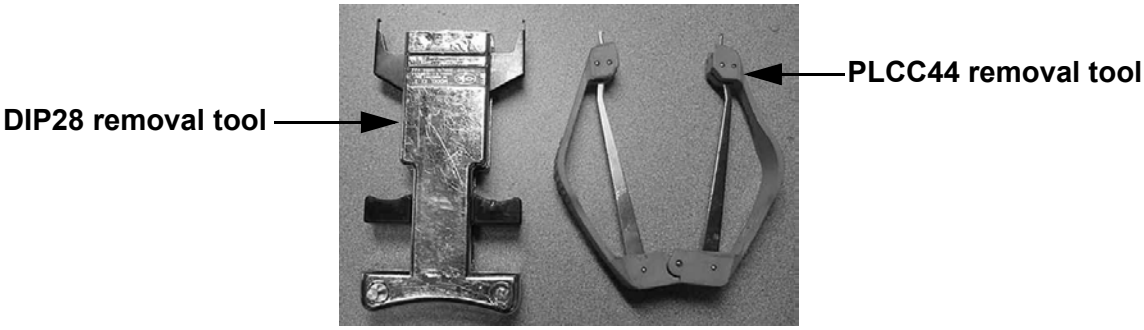
Procedure 7.3 - Replacing the PROM

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

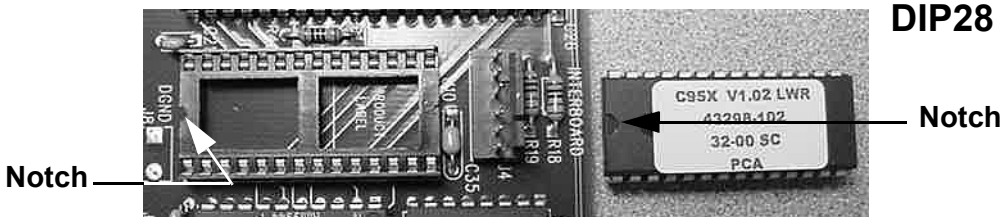
1. The PROM and the associated printed circuit assembly (PCA) are static sensitive. Anti-static devices must be used and all anti-static precautions must be followed during this procedure.

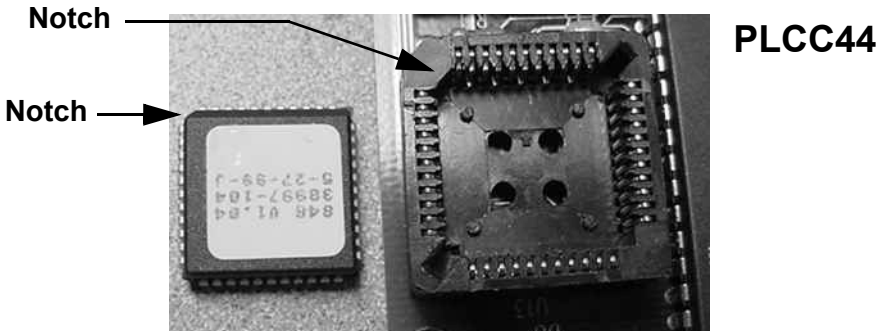
2. Remove the printed circuit assembly per its associated procedure.

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



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





Procedure 7.4 - Replacing the Power Cable Harness

Removing the Power Cable Harness

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

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

Note:
Take care not to damage the cables when you perform the next step.

1. Remove the screws that secure the power entry module to the climber frame. Pull the module out of the climber.

2. Disconnect the lower ribbon cable, remote sensor cable and magnet harness from the lower PCA.

3. Remove the nut that secures the wires on the power entry module ground stud. Remove the wires from the ground stud.

Note:
Set the power entry module on a work bench while you perform the following steps.

4. Remove the brown wire from the circuit breaker line terminal. Do not remove the brown wire from the circuit breaker load terminal.

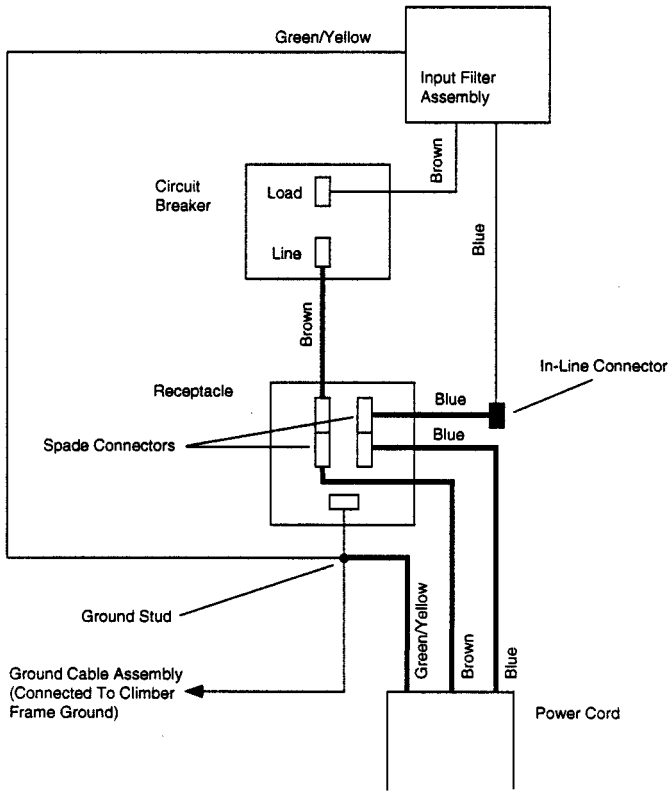
Note:
The line and load terminals are marked on the paper label on the circuit breaker

5. Disconnect the in-line connector that connects the blue wires between the input filter and power cord (see Diagram 7.3).

Note:
Take care not to damage the power cord connectors when you perform the next step and when you replace the power cord in the power entry module.

6. Using pliers, press the two sections of the strain relief together. Keep the pressure on the strain relief while you gently pull the power cord and strain relief away from the power entry module. Remove the strain relief from the power cord.

Diagram 7.3 - Power Entry Wiring



Replacing the Power Cable Harness

7. Push the power cord into the round hole on the front of the power entry module. Make sure that the power cord connectors can reach the ground stud and circuit breaker.

8. Place the strain relief around the power cable insulation that is next to the outside of the power entry module.

9. Using the pliers, press the two sections of the strain relief together while you push the strain relief into the round hole on the front of the power entry module.

10. Connect the in-line connectors on the ends of the loose blue wires attached to the input filter assembly and the power cord (see Diagram 7.3).

11. Connect the brown wire on the power cord to the line terminal on the circuit breaker.

12. Position the power entry module near enough to the climber to connect the lower ribbon cable to the lower PCA.

13. Connect the remote sensor cable and the magnet harness to the lower PCA.

14. Place the ground cable assembly and the ground wires attached to the input filter assembly and power cord on the power entry module ground stud. Install the nut that secures the wires on the ground stud.

Note:
Take care not to pinch the cables when you perform the next step.

15. Push the power entry module into the climber. Install the screws that secure the power entry module to the climber frame.

16. Check the operation of the climber as described in Section Four, Checking Unit Operation.

Procedure 7.5 - Replacing the Lower PCA

Removing the Lower PCA

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

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

Note:
Take care not to damage the cables when you perform the next step.

2. Remove the fasteners that secure the power entry module to the climber frame. Pull the module out of the climber.

3. Disconnect the lower ribbon cable, remote sensor cable, magnet harness and transformer cable from the lower PCA.

4. Remove the input filter cable from the lower PCA.

5. Remove the fasteners that secure the lower PCA to the power entry module.

6. Set aside the lower PCA for eventual shipment to Precor Customer Service.

Note:
When you package the lower PCA, provide the information listed in Procedure 2.5, Documenting Software Problems.

Replacing the Lower PCA

7. Position the lower PCA at its mounting location. Orient the PCA so that the nine-pin header is as close as possible to the transformer.

8. Install the fasteners that secure the lower PCA to the power entry module.

9. Connect the input filter cable, magnet harness, lower ribbon cable, remote sensor cable and transformer cable to the lower PCA.

Note:
Take care not to pinch the cables when you perform the next step.

10. Push the power entry module into the climber. Install the screws that secure the power entry module to the climber frame.

11. Check the operation of the climber as described in Section Four, Checking Unit Operation.

Procedure 7.6 - Replacing the Circuit Breaker

Removing the Circuit Breaker

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

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

Note
Take care not to damage the cables when you perform the next step.

2. Remove the fasteners that secure the power entry module to the climber frame. Pull the module out of the climber.

Note:
The line and load terminals are marked on the paper label on the circuit breaker.

3. Using the tape, mark the brown wire that is connected between the load terminal of the circuit breaker and the input filter assembly (see Diagram 7-7). Remove both brown wires from the circuit breaker terminals.

Note:
Notice the orientation of the circuit breaker before you perform the next step. The new breaker must be positioned the same way when you mount it in the power entry module.

4. Remove the fasteners that secure the circuit breaker to the power entry module. Remove the circuit breaker from its mounting position.

Replacing the Circuit Breaker

5. Position the new circuit breaker at its mounting location on the power entry module. Make sure that the paper label on the circuit breaker faces the bottom of the power entry module.

6. Install the fasteners that secure the circuit breaker to the power entry module.

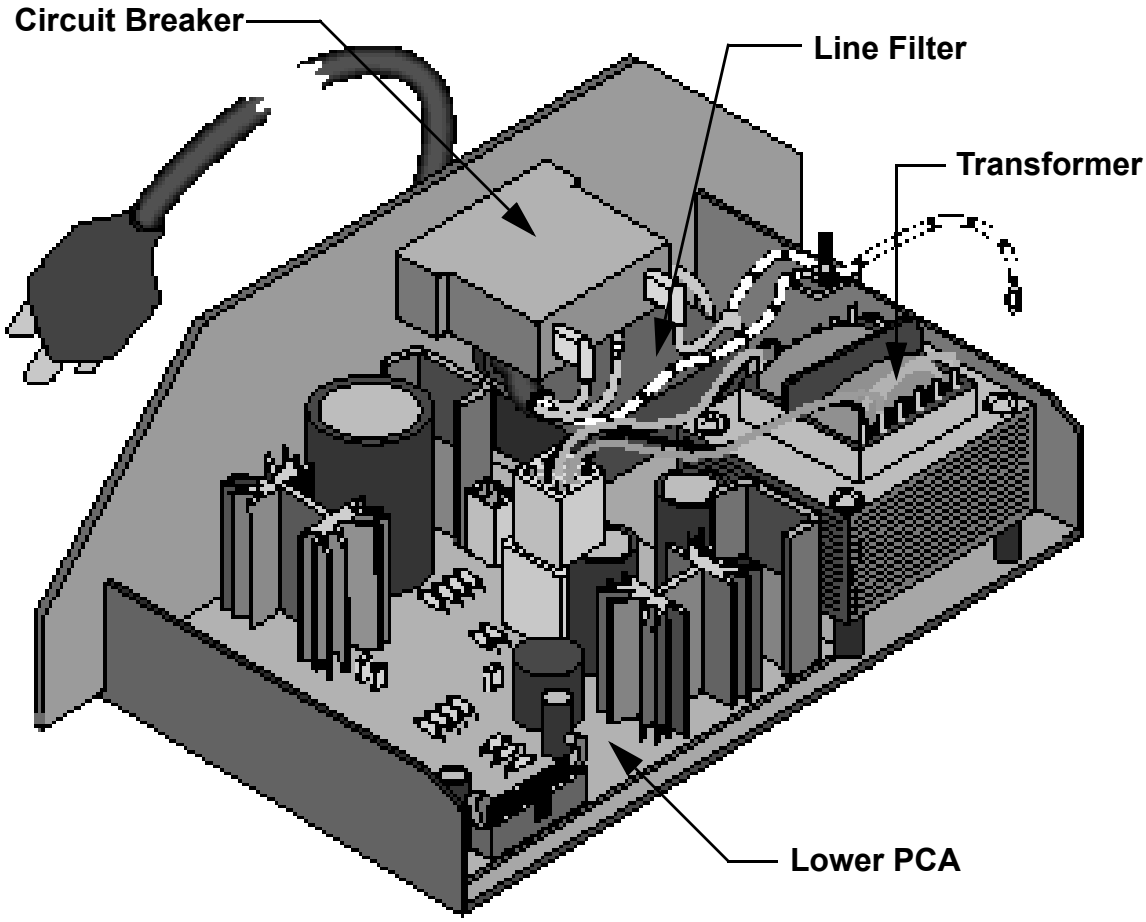
7. Connect the brown wire marked with tape to the load terminal on the circuit breaker. Connect the remaining brown wire to the line terminal on the circuit breaker.

Note:
Take care not to pinch the cables when you perform the next step.

8. Push the power entry module into the climber. Install the screws that secure the power entry module to the climber frame.

9. Check the operation of the climber as described in Section Four, Checking Unit Operation.

Diagram 7.4 - The Power Module



Procedure 7.7 - Replacing the Line Filter

Removing the Line Filter Assembly

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

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

Note:
Take care not to damage the cables when you perform the next step.

2. Remove the screws that secure the power module to the climber frame. Pull the module out of the climber.

3. Disconnect the lower ribbon cable, remote sensor cable and magnet harness from the lower PCA.

4. Remove the nut that secures the wires on the power entry module ground stud. Remove the wires from the ground stud.

Note:
Set the power entry module on a work bench while you perform the following steps.

5. Remove the screws that secure the circuit breaker to the power entry module. Remove the breaker from its mounting position.

Note:
The line and load terminals are marked on the paper label on the circuit breaker.

6. Remove the brown wire from the circuit breaker load terminal. Do not remove the brown wire from the breaker line terminal.

7. Disconnect the line filter cable from the lower PCA (refer back to Diagram 7.4).

8. Disconnect the in-line connector that connects the blue wires on the line filter assembly to the power cord.

9. Remove the screws that secure the line filter assembly to the power entry module. Remove the input filter assembly from its mounting position.

Replacing the Input Filter Assembly

When you perform the next step, orientate the line filter assembly so that the side of the filter assembly with the green/yellow wire is nearest the power entry module ground stud.

10. Position the line filter assembly at its mounting location on the power entry module. Install the screws that secure the input filter assembly to the power entry module.

11. Place the ground cable assembly and the ground wires attached to the line filter assembly and power cord on the power entry module ground stud. Install the nut that secures the wires on the ground stud.

12. Connect the line filter cable to the lower PCA.

13. Connect the brown wire removed in Step 8 to the load terminal of the circuit breaker.

14. Connect the in-line connectors on the ends of the loose blue wires on the line filter assembly and the power cord.

15. Position the circuit breaker at its mounting location on the power entry module. Install the screws that secure the circuit breaker to the power entry module.

16. Position the power entry module near enough to the climber to connect the lower ribbon cable to the lower PCA.

17. Connect the remote sensor cable and the magnet harness to the lower PCA.

Note:
Take care not to pinch the cables when you perform the next step.

18. Push the power entry module into the climber. Install the screws that secure the power entry module to the climber frame.

19. Check the climber operation as described in Section Four, Checking Unit Operation.

Procedure 7.8 - Replacing the Transformer

Removing the Transformer

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

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

Note:
Take care not to damage the cables when you perform the next step.

2. Remove the screws that secure the power entry module to the climber frame. Pull the module out of the climber.

3. Remove the transformer cable assembly from the lower PCA.

4. Remove the fasteners that secure the transformer to the power entry module.

Note:
Notice the orientation of the transformer before you perform the next step. The transformer must be positioned the same way when you mount it in the power entry module.

5. Remove the transformer from the power entry module.

Replacing the Transformer

6. Position the new transformer at its mounting location on the power entry module. Make sure that the orientation of the transformer is the same as that of the original unit.

7. Install the fasteners that secure the transformer to the power entry module.

8. Connect the transformer cable to the lower PCA.

Note:
Take care not to pinch the cables when you perform the next step.

9. Push the power entry module into the climber. Install the screws that secure the power entry module to the climber frame.

10. Check the climber operation as described in Section Four, Checking Unit Operation.

Procedure 7.9 - Replacing the Ground Cable Assembly

There are three wires on the power entry module ground stud. Two of these wires are connected to the input filter assembly and the power cord. The third wire is the ground cable assembly. It is connected to the ground stud on the climber frame.

Removing the Ground Cable Assembly

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

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

Note:
Take care not to damage the cables when you perform the next step.

2. Remove the screws that secure the power entry module to the climber frame. Pull the module out of the climber

3. Remove the nut that secures the wires on the power entry module ground stud. Remove the wires from the ground stud.

4. Reaching into the hole in the cover, remove the screw that secures the ground cable assembly to the climber frame.

Replacing the Ground Cable Assembly

5. Insert the screw removed in the previous step onto one end of the ground cable assembly. Mount the screw and ground cable assembly to the climber frame.

6. Place the ground cable assembly and the ground wires attached to the input filter assembly and power cord on the power entry module ground stud. Install the nut that secures the wires on the ground stud.

Note:
Take care not to pinch the cables when you perform the next step.

7. Push the power entry module into the climber. Install the screws that secure the power entry module to the climber frame.

8. Check the climber operation as described in Section Four, Checking Unit Operation.

Procedure 7.10 - Replacing the Lower and/or Upper Ribbon Cables

Before you install a new ribbon cable, ensure that the ribbon cable is defective as described in Procedure 6.1, Troubleshooting the Lower and Upper Ribbon Cables.

Removing the Lower Ribbon Cable

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

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

2. Slide the enclosure collar up on the column.

3. Disconnect the lower ribbon cable from the upper ribbon cable (see Diagram 7.5).

4. Choose one:

IF...	THEN...
You are replacing the upper ribbon cable	Skip to Step 20
You are replacing the lower ribbon cable	Continue with the next step

Note:
Take care not to damage the cables when you perform the next step.

5. Remove the screws that secure the power entry module to the climber frame. Pull the module out of the climber.

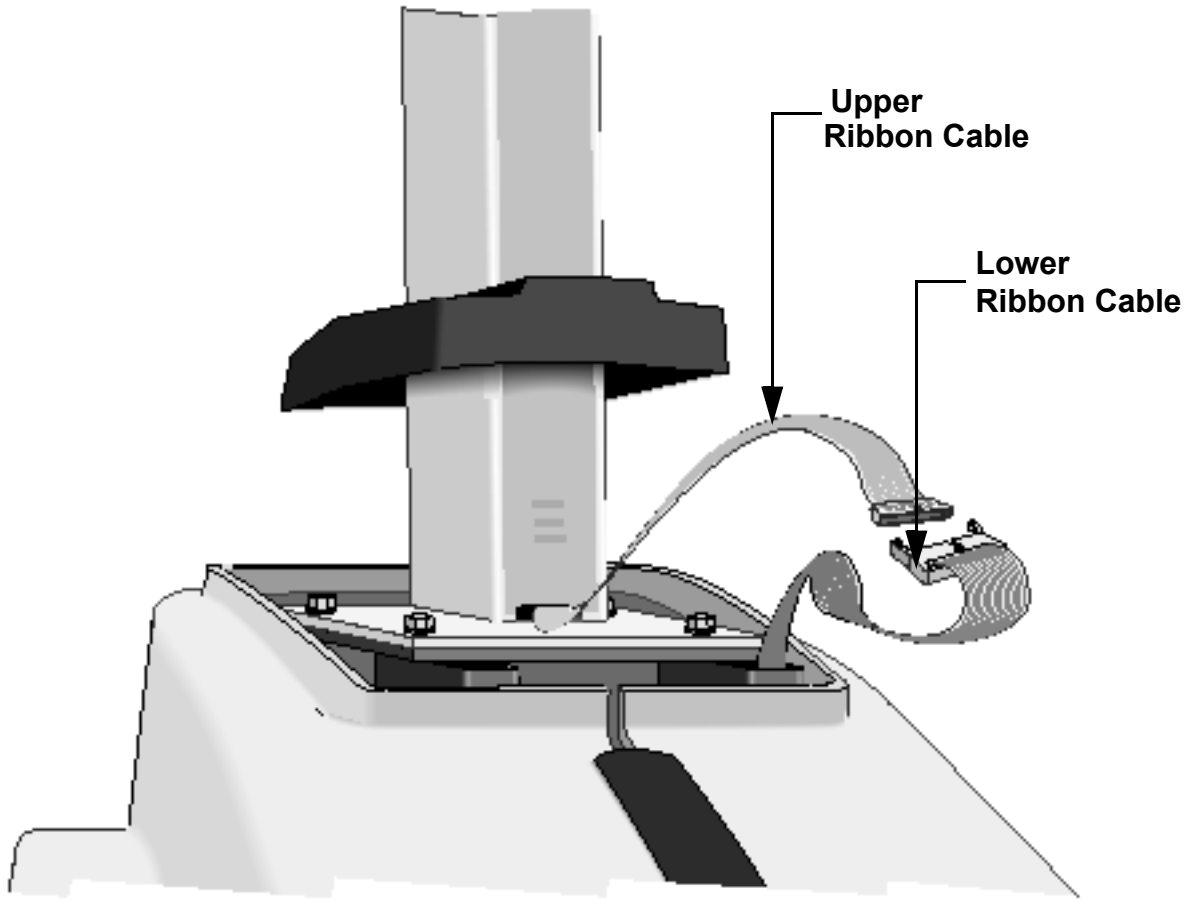
6. Disconnect the lower ribbon cable from the lower PCA.

7. Loosen the fastener that secures the top of the left cover to the climber frame.

8. Remove the screws that secure the left cover to the climber frame. Set the left cover aside.

9. Remove the front and back cover enclosure strips from the climber.

Diagram 7.5 - Upper and Lower Ribbon Cables



Note:
The cable clips hold the lower ribbon cable away from moving components on the climber. Note how the lower ribbon cable is folded and routed through the cable clips.

10. Remove the lower ribbon cable from the cable clips mounted on the climber frame.

Replacing the Lower Ribbon Cable

11. Gently feed one end of the ribbon cable down through the left column frame upright.

12. Connect the new lower ribbon cable to the upper ribbon cable and the lower PCA.

13. Fold the ribbon cable in half and route it through the cable clips mounted on the climber frame. Make sure that the ribbon cable does not come in contact with moving components.

14. Position the left cover against the climber frame.

Note:
Take care not to pinch the cables when you perform the next step.

15. Push the power entry module into the climber. Install the screws that secure the power entry module to the climber frame.

16. Install the screws that secure the left cover to the climber frame.

17. Tighten the fastener that secures the top of the left cover to the climber frame.

18. Position the front cover enclosure strip over the gap created by the right and left covers. Press the strip along its length until the top of the enclosure strip lies next to the cover surface. Repeat this step for the back cover enclosure strip.

19. If you are installing a new upper ribbon cable on the climber**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 30.

Removing the Upper Ribbon Cable

20. Remove the screws that secure the display housing to the display base plate.

21. Push each set of tabs toward the edges of the base plate as you lift the display housing.

Note:
Turn over the display housing and support it on the display base plate while you perform the following steps.

22. Disconnect the upper ribbon cable from the upper PCA. Do not pull the cable out of the frame upright at this time. Set the display housing aside.

Replacing the Upper Ribbon Cable

23. Tape one end of the new upper ribbon cable to the lower end of the original upper ribbon cable.

24. Pull the original upper ribbon cable from the top of the column and through the display base plate. When the connector of the new cable clears the top of the column, disconnect and discard the original ribbon cable.

25. Support the display housing while you connect the new upper ribbon cable to the upper PCA.

26. Line up the tabs on the display housing with the tab holes on the display base plate.

27. Gently press the display housing onto the display base plate until the tabs are pushed into the holes on the base plate.

28. Replace the screws that secure the display housing to the display base plate

Note:
Gently push any excess cable into the column.

29. Connect the upper and lower ribbon cables to each other.

30. Slide the enclosure collar down the column and over the column mounting screws. Press down to ensure a snug fit.

31. Check the operation of the climber as described in Section Four, Checking Unit Operation.

Procedure 7.11 - Replacing the Remote Sensor Assembly

Removing the Remote Sensor Assembly

1. Remove the covers as described in Procedure 7.1.

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

2. Remove the remote sensor cable from the lower PCA.

Note:
The cable clips hold the remote sensor cable away from moving components on the climber.

3. Remove the remote sensor cable from the cable clips mounted on the climber frame.

4. Remove the fasteners that secure the remote sensor to the disk bracket.

5. Remove the remote sensor assembly from the disk bracket.

Replacing the Remote Sensor Assembly

6. Position the remote sensor assembly on the disk mounting bracket. Make sure that the remote sensor assembly tabs straddle the target (see Diagram 7.6).

7. Install the fasteners that secure the remote sensor to the disk bracket.

Note:
The plain washer must be mounted next to the disk bracket.

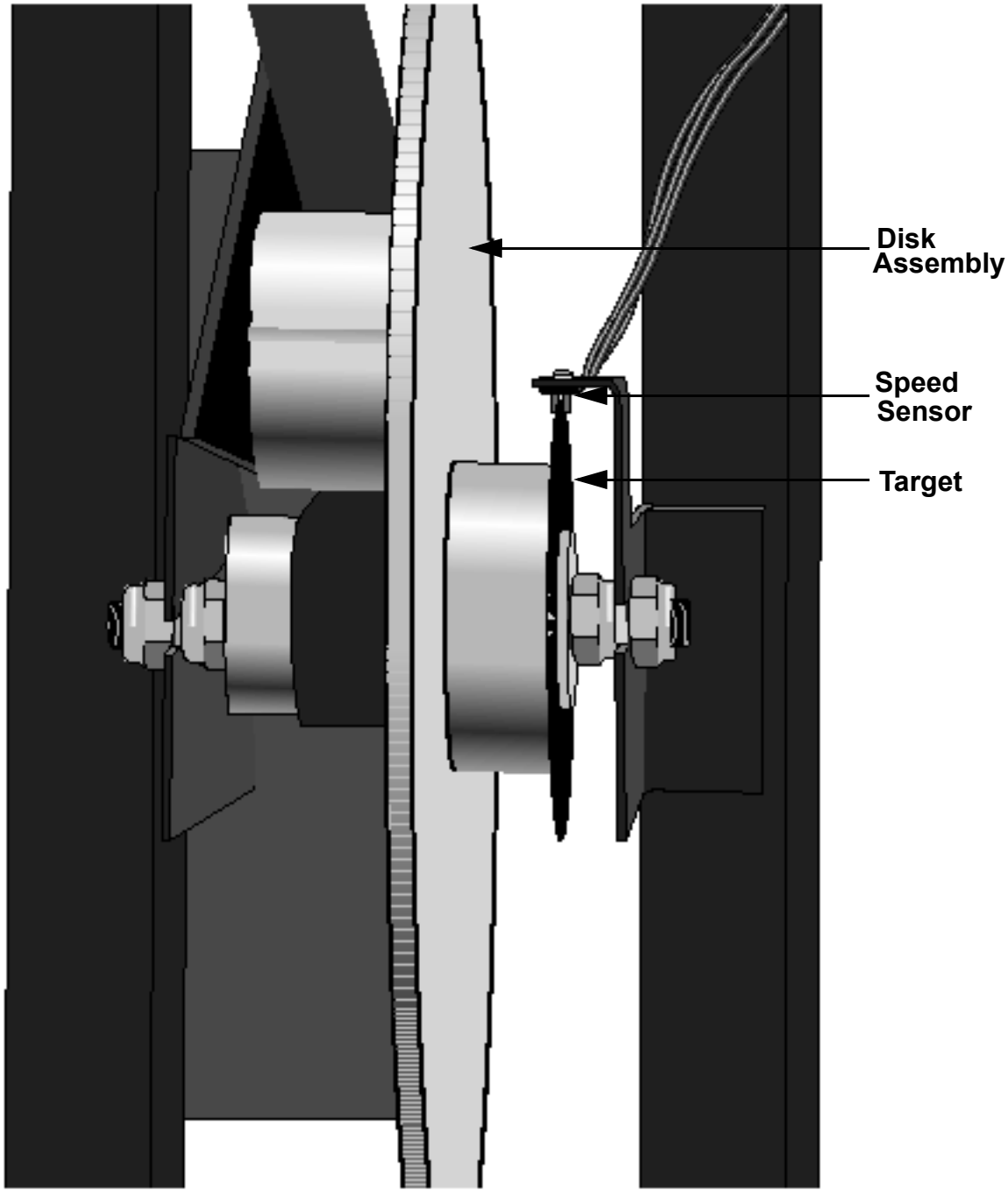
8. Route the remote sensor cable through the cable clips mounted on the climber frame.

CAUTION
The remote sensor cable must not come in contact with moving components.

9. Connect the remote sensor cable to the lower PCA.

10. Check the operation of the climber as described in Section Four, then replace the covers as described in Procedure 7.1.

Diagram 7.6 - Speed Sensor and Target



Procedure 7.12 - Replacing the Magnet Cable Assembly

Removing the Magnet Cable Assembly

1. Remove the right cover as described in Procedure 7.1.

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

2. Remove the screw that secures the magnet cable in the cable clamp.

3. Remove the magnet cable assembly from the lower PCA.

4. Remove the blue, red, and yellow wires from the four magnet coils.

Replacing the Magnet Cable Assembly

The wires that make up the magnet cable assembly are pre-formed. When the magnet cable assembly is installed correctly, the wires will fit naturally around the magnet assemblies.

5. Push the blue wire connectors on the magnet cable assembly onto the top terminals on the upper magnet coils (see Diagram 7.7).

6. Push the red wire connectors on the magnet cable assembly onto the top terminals on the lower magnet coils.

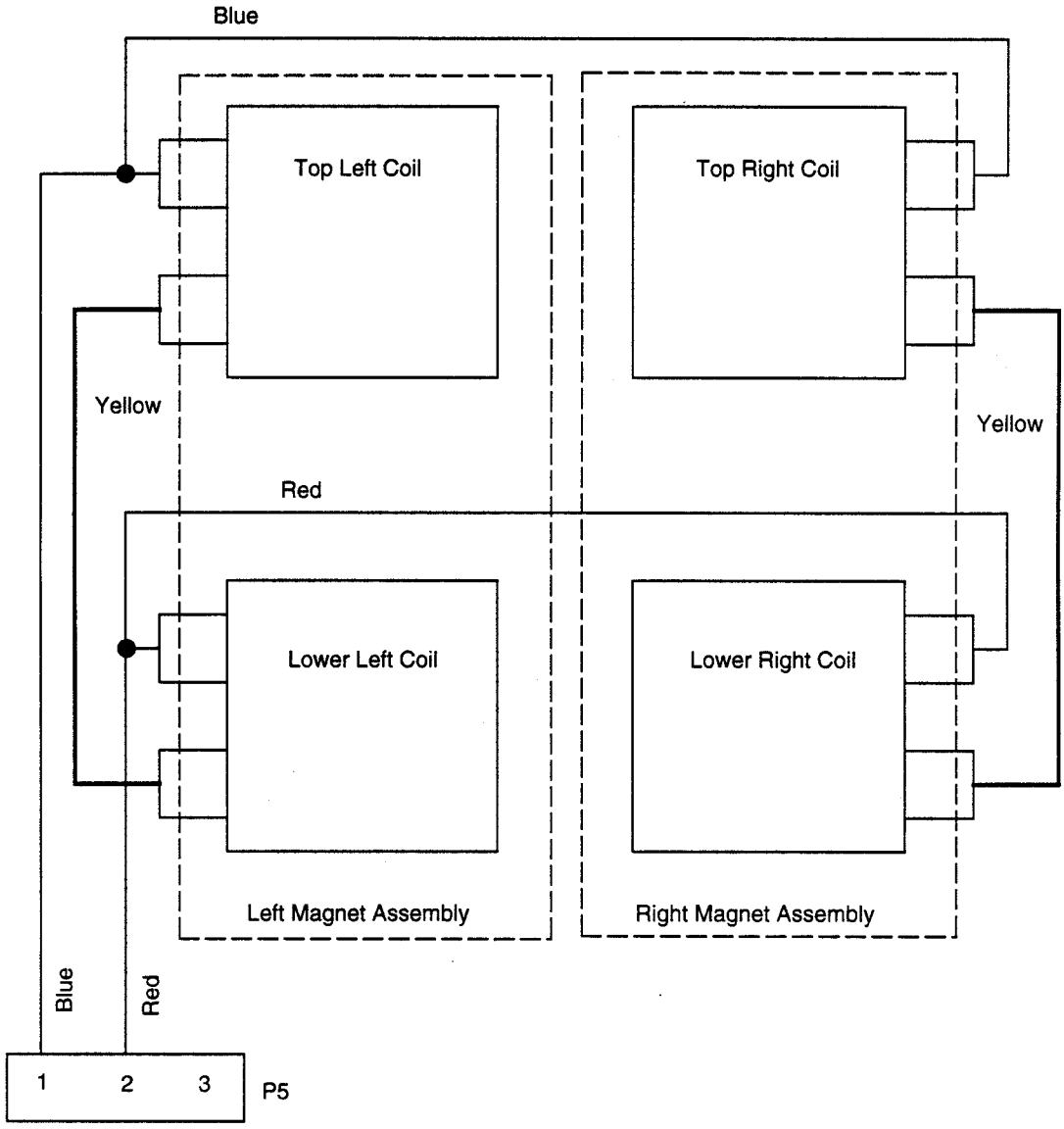
7. Connect one yellow wire to the empty terminals on the magnet coils of the right magnet assembly. Connect the remaining yellow wire to the empty terminals on the magnet coils of the left magnet assembly.

8. Connect the magnet cable assembly to the lower PCA.

9. Place the magnet cable in the cable clamp you opened in Step 2. Install the screw that secures the magnet cable in the cable clamp.

10. Check the operation of the climber as described in Section Four, then replace the cover as described in Procedure 7.1.

Diagram 7.7 - Magnet Wiring



Procedure 7.13 - Replacing a Magnet Assembly

Each magnet assembly consists of an upper and a lower magnet coil. Diagram 7.8 shows the magnet assemblies used on the C760 Series Climbers.

Removing a Magnet Assembly

1. Remove the covers as described in Procedure 7.1.

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

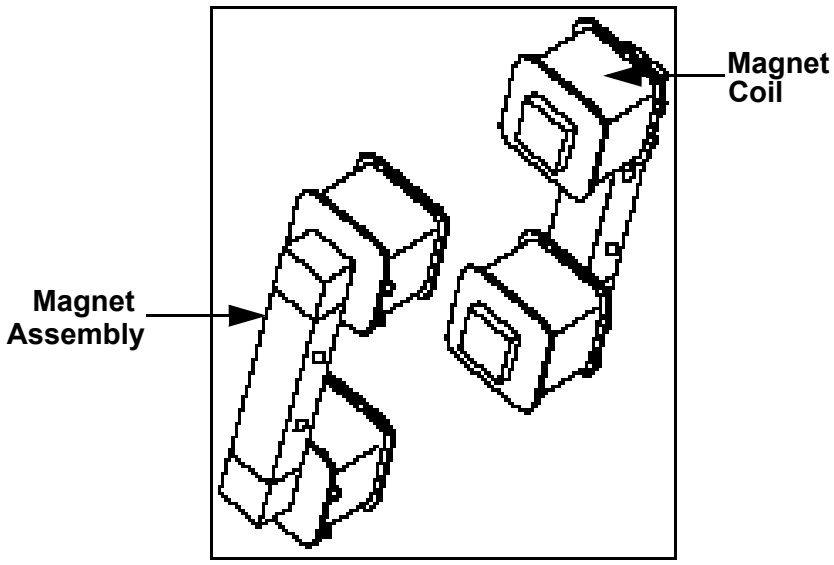
2. Remove the blue, red, and yellow wires from the magnet coils on the magnet assembly you are removing.

3. Remove the fasteners that secure the magnet assembly to the frame upright. Set aside the magnet assembly.

4. If you are removing only one magnet assembly**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 2 and 3 for the second magnet assembly; then continue with the next step.

Diagram 7.8 - Magnet Assemblies



Replacing a Magnet Assembly

Do not tighten the bolts more than finger tight when you perform the next step.

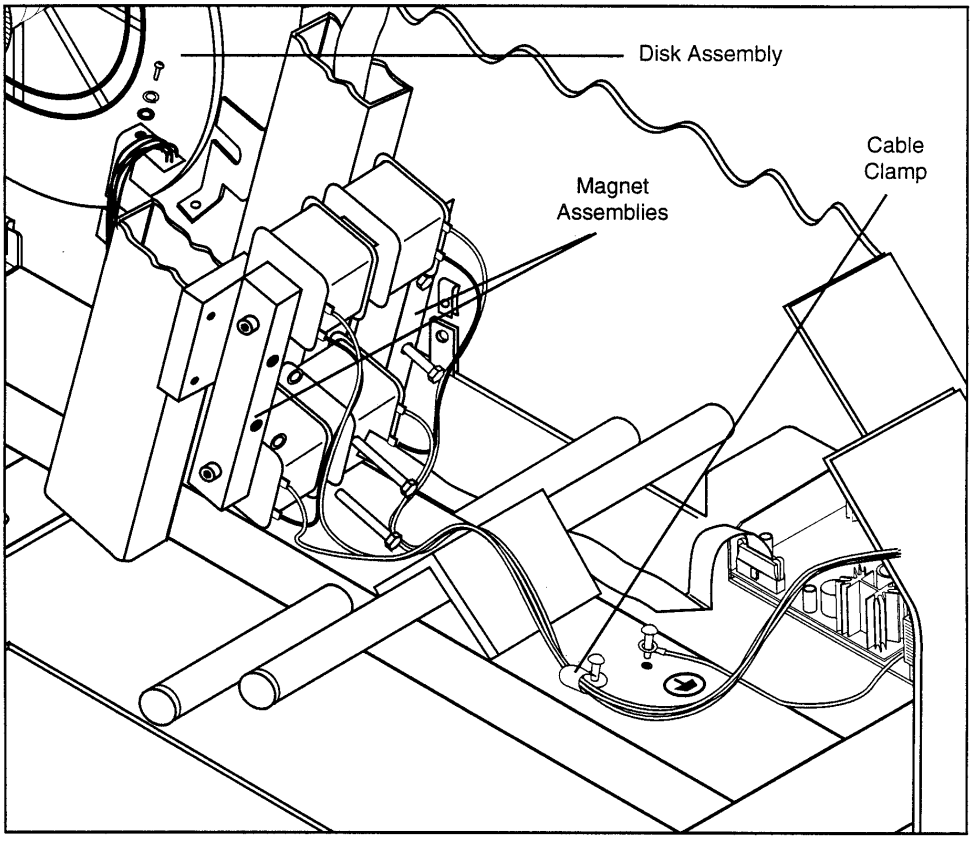
5. Position the magnet assembly against the frame upright (see Diagram 7.9). Install the fasteners that secure the magnet assembly to the frame upright.

6. If you are replacing only one magnet assembly**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Step 5 for the second magnet assembly; then continue with the next step.

7. Inspect the gaps between the disk and the magnet assemblies as described in Procedure 5.1.

Diagram 7.9 - The Magnet Assembly



Note:
The wires that make up the magnet cable assembly are pre-bent. When the magnet cable assembly is installed correctly, the wires will fit naturally around the magnet assemblies.

8. Push the blue wire connector onto the top terminal on the upper magnet coil. Push the red wire connector onto the top terminal on the lower magnet coil. Connect the ends of the yellow wire to the empty terminals on the magnet coils. Repeat this step if you replaced both magnet assemblies.

9. Check the operation of the climber as described in Section Four, then replace the covers as described in Procedure 7.1.

Procedure 7.14 - Replacing a Return Spring

Removing the Return Spring

If you are removing only one return spring, remove only one cover. It is not necessary to remove both covers unless you are removing both return springs.

1. Remove the cover necessary to access the return spring you are removing as described in Procedure 7.1.

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

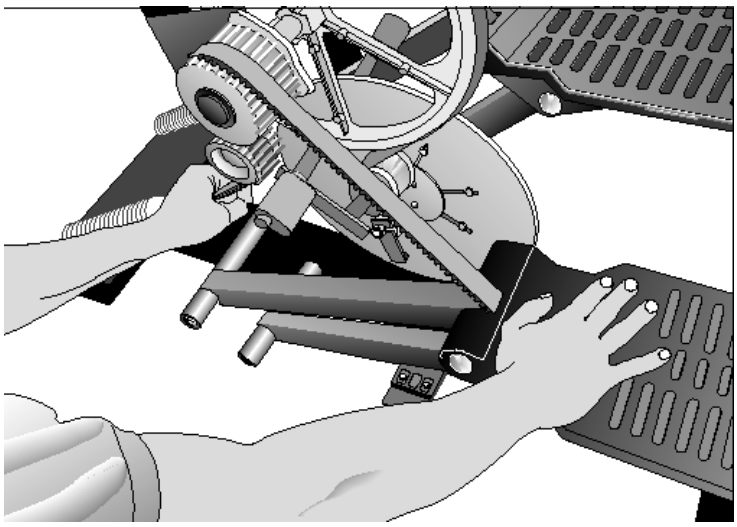
2. Press down the stair arm with one hand. With your other hand, grasp and pull the end of the stairarm belt connected to the return spring. Release the stair arm. Remove the belt from the pulley and belt idler (see Diagram 7.10).

3. Remove the return spring from the grooved belt clamp and spring bracket.

4. If you are replacing only one return spring**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 2 and 3 for the second spring; then continue with the next step.

Diagram 7.10 - Removing a Stairarm belt



Replacing the Return Spring

5. Visually inspect the grommet for wear, cracks, or other damage. Replace the grommet if necessary.

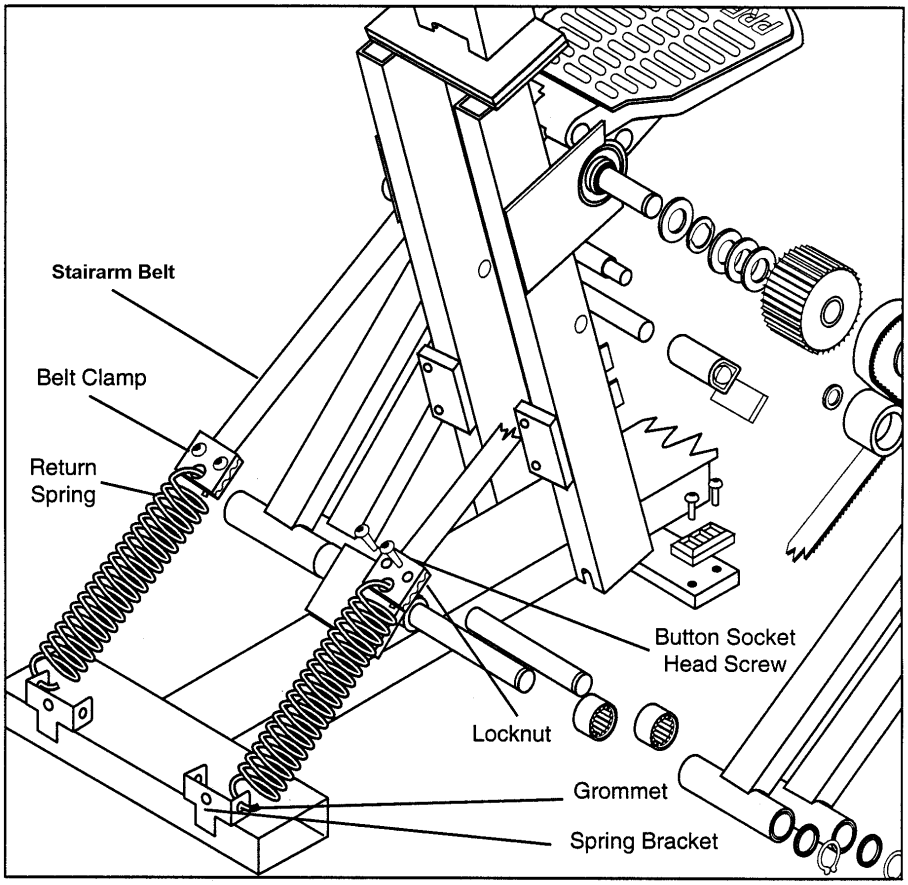
Note:
Each spring bracket has two holes. Insert the spring into the outer hole on the bracket when you perform the next step (see Diagram 7.11).

6. Insert one end of the return spring in the spring bracket.

Note:
When you perform the next step, make sure that the end of the spring points down when you place it in the clamp.

7. Place the other end of the return spring in the grooved belt clamp. Position the spring as shown in Diagram 7.11.

Diagram 7.11 - The Return Springs



8. Lift the stair arm assembly from the frame weldment. Grasp the Stairarm belt and lift it over the toothed pulley. Route the belt under the idler pulley.

9. If you are replacing only one return spring**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 5 through 8 for the second spring; then continue with the next step.

10. Check the operation of the climber as described in Section Four, then replace the cover as described in Procedure 7.1.

Procedure 7.15 - Replacing A Stairarm Belt

Removing the Stairarm Belt

If you are removing only one stairarm belt, remove only one cover. It is not necessary to remove both covers unless you are removing both stairarm belts.

1. Remove the cover necessary to access the stairarm belt you are removing as described in Procedure 7.1.

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

2. Press down the stair arm with one hand. With your other hand, grasp and pull the end of the stairarm belt connected to the return spring. Release the stair arm. Remove the belt from the pulley and belt idler (refer back to Diagram 7.10).

3. Remove the spring from the grooved belt clamp.

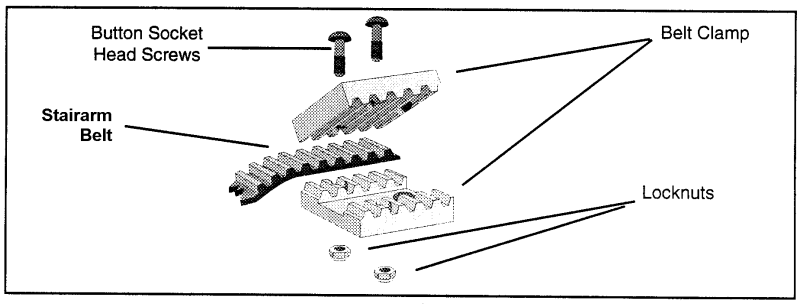
4. Remove the fasteners that hold the halves of the grooved belt clamp together (see Diagram 7.12).

5. Remove the fasteners that secure the belt clamp to the underside of the pedal. Set aside the belt clamp and stairarm belt.

6. If you are replacing one stairarm belt only**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 2 through 5 for the second stairarm belt; then continue with the next step.

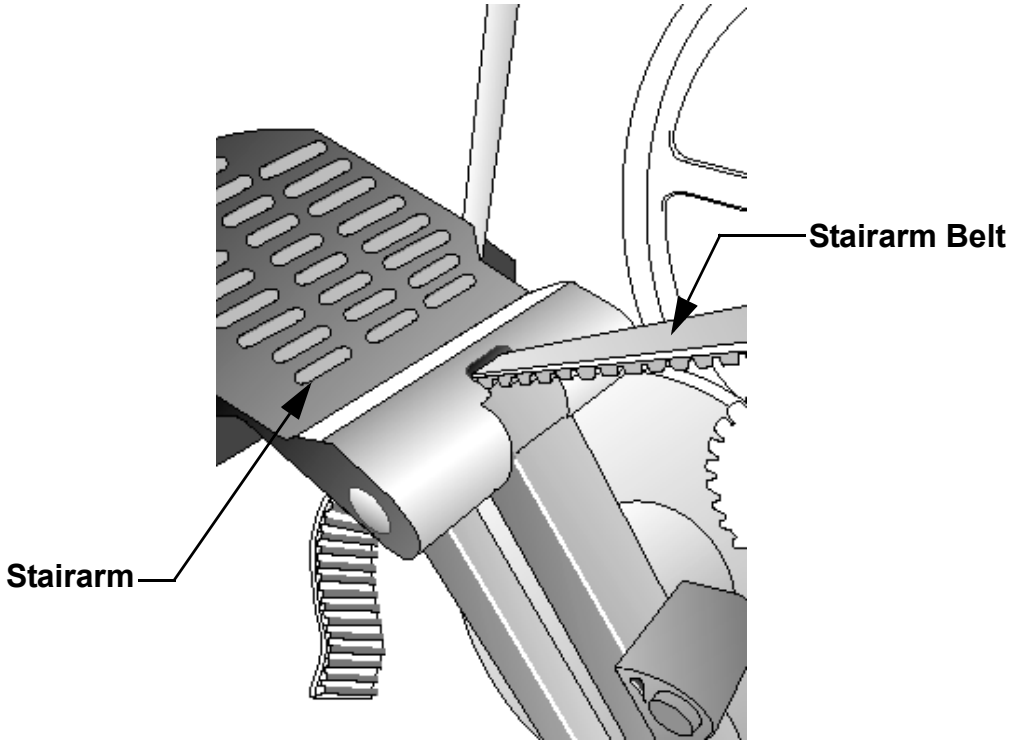
Diagram 7.12 - Stairarm Belt Clamps



Replacing the Stairarm Belt

7. Route one end of the stairarm belt through the front of the pedal (see Diagram 7.13).

Diagram 7.13 - Routing the Stairarm Belt



8. Place and hold the end of the belt against the belt clamp weldment on the underside of the pedal. The end of the belt should be flush with the end of the clamp.

9. Place the belt clamp against the belt positioned in the previous step.

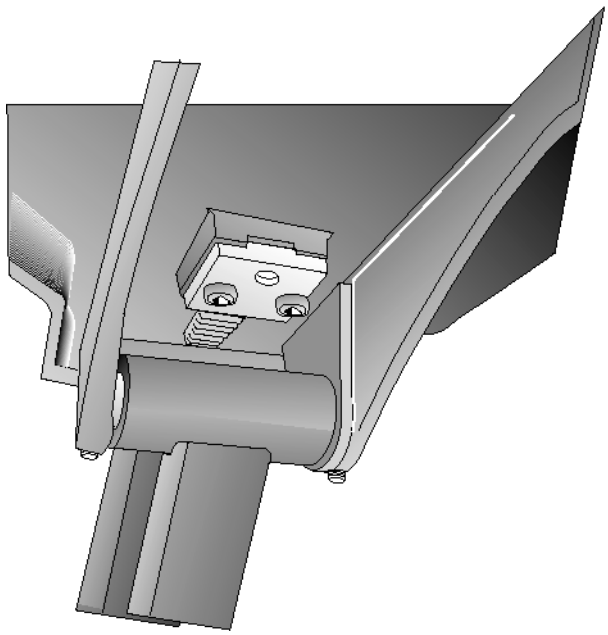
Note:
Hold the belt clamp against the belt and slotted area on the underside of the pedal when you perform the next step.

10. Install the fasteners that secure the belt clamp to the pedal (see Diagram 7.11).

11. Place and hold the other end of the belt against one half of the grooved belt clamp. The end of the belt should be flush with the hole in the clamp.

12. Place the remaining side of the grooved belt clamp against the belt positioned in the previous step.

Diagram 7.14 - Underside of Stairarm Pedal



Note:
Hold the sides of the grooved belt clamp together when you perform the next step.

13. Install the fasteners that hold the sides of the grooved belt clamp together.

14. Place the return spring in the grooved belt clamp. Position the spring as shown in Diagram 7-14.

15. Lift the stair arm assembly from the frame weldment. Grasp the stairarm belt and lift it over the toothed pulley. Route the belt under the idler pulley

16. If you are replacing only one stairarm belt**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 7 through 15 for the second stairarm belt; then continue with the next step.

17. Check the operation of the climber as described in Section Four, then replace the cover as described in Procedure 7.1.

Procedure 7.16 - Replacing A Toothed Pulley

Removing the Toothed Pulley

If you are removing only one toothed pulley assembly, remove only one cover. It is not necessary to remove both covers unless you are removing both toothed pulleys.

1. Remove the cover necessary to access the toothed pulley you are removing as described in Procedure 7.1.

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

2. Press down the stair arm with one hand. With your other hand, grasp and pull the end of the stairarm belt connected to the return spring. Release the stair arm. Remove the belt from the toothed pulley and belt idler (refer back to Diagram 7.10).

3. Remove the retaining ring from the toothed pulley (see Diagram 7.15).

4. Remove the five thrust washers, toothed pulley, and wave washer from the sheave shaft.

5. If you are replacing only one toothed pulley**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 2 through 4 for the second pulley; then continue with the next step.

Replacing the Toothed Pulley

6. Visually inspect the thrust washers and the wave washer removed in Step 4 for wear or damage. If the visual inspection indicates no wear or damage**...**

THEN...	**OTHERWISE...**
Use the original washers when you perform the following steps.	Replace the worn or damaged washers with new washers when you perform the following steps.

7. Slide a thrust washer, the wave washer, and three more thrust washers onto the sheave shaft.

Important
There is text on one side of the toothed pulley. When you replace the right pulley, position the pulley on the sheave shaft so that the text faces you when you stand on the right side of the climber. When you install the left toothed pulley, position the pulley on the sheave shaft so that the text faces away from you when you stand on the left side of the climber.

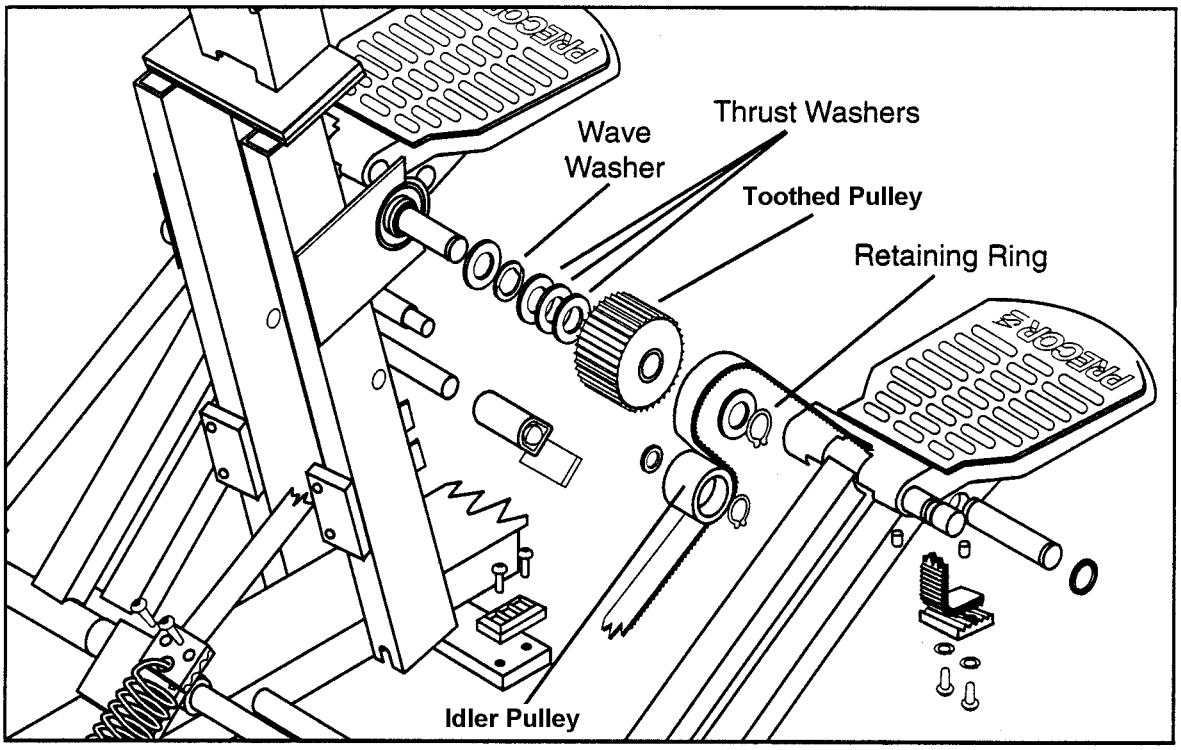
8. Slide the toothed pulley onto the sheave shaft. If the pulley is on the right side of the climber, face the pulley and rotate it counterclockwise while you watch the sheave. If the pulley is on the left side of the climber, face the pulley and rotate it clockwise while you watch the sheave.

9. If the sheave moves**...**

THEN...	**OTHERWISE...**
The pulley is correctly installed; continue with the next step.	Remove the pulley and re-position it on the sheave shaft.

10. Slide the remaining thrust washer onto the sheave shaft. Install the retaining ring next to the pulley.

Diagram 7.15 - Toothed Pulley Mounting



11. Lift the stairarm assembly from the frame weldment. Grasp the stairarm belt and lift it over the toothed pulley. Route the belt under the idler pulley.

12. If you are replacing only one toothed pulley**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 6 through 10 for the second pulley; then continue with the next step.

13. Check the operation of the climber as described in Section Four, then replace the cover as described in Procedure 7.1.

Procedure 7.17 - Replacing An Idler Pulley

Removing the Idler Pulley

If you are removing only one idler pulley, remove only one cover. It is not necessary to remove both covers unless you are removing both idler pulleys.

1. Remove the cover necessary to access the idler pulley you are removing as described in Procedure 7.1.

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

2. Press down the stairarm with one hand. With your other hand, grasp and pull the end of the stairarm belt connected to the return spring. Release the stair arm. Remove the belt from the pulley and belt idler (refer back to Diagram 7.10).

3. Remove the retaining ring from the idler pulley (refer back to Diagram 7.15).

4. Slide the idler pulley and wave washer from the idler shaft weldment.

5. If you are replacing only one idler pulley**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 2 through 4 for the second idler pulley; then continue with the next step.

Replacing the Idler Pulley

6. Visually inspect the wave washer removed in Step 4 for wear or damage.

7. If the visual inspection indicates no wear or damage**...**

THEN...	**OTHERWISE...**
Use the original washer when you perform the next step.	Replace the washer with a new washer when you perform the following step.

8. Slide the wave washer and idler pulley onto the idler shaft weldment.

9. Using the snap ring pliers, install the retaining ring next to the idler pulley.

10. Lift the stairarm assembly from the frame weldment. Grasp the stairarm belt and lift it over the toothed pulley. Route the belt under the idler pulley.

11. If you are replacing only one idler pulley**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 6 through 10 for the second idler; then continue with the next step.

12. Check the operation of the climber as described in Section Four, then replace the cover as described in Procedure 7.1.

Procedure 7.18 - Replacing the Disk Assembly

Diagram 1.2 shows the Version A and Version B disk assembly shafts. Version A and Version B disk assemblies are interchangeable. The part number for the Version A disk assembly is 36020-101. 36020-102 is the part number for the Version B disk assembly. You will need two 17mm open-end wrenches to remove and replace the Version A disk assembly. The Version B disk assembly can be removed and replaced with only one 17mm open-end wrench.

Removing the Disk Assembly

1. Remove the covers as described in Procedure 7.1.

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

2. Loosen the drive belt by pushing down on the top end of the drive belt idler arm. Hold the idler arm down while you pull the belt out of the sheave rim. Place the belt on the left end of the sheave shaft.

3. Choose one:

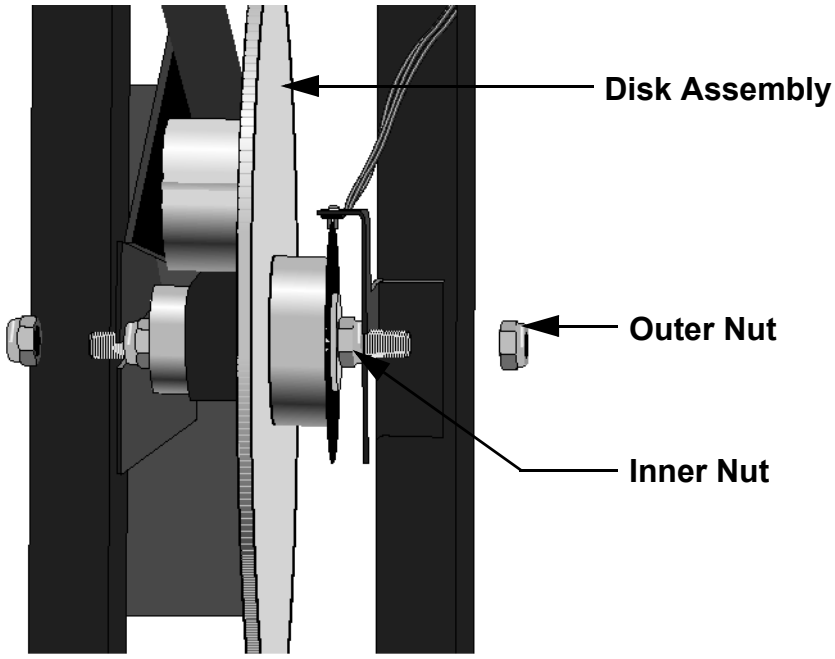
IF...	**THEN...**
You are removing a Version A disk assembly	Continue with the next step
You are removing a Version B disk assembly	Using a 17mm open-end wrench, loosen the outer nuts on each end of the disk axle (see Diagram 7.16); then skip to Step 5

4. Using one of the 17mm open-end wrenches, hold the inner nut on the disk assembly. Using the second 17mm open-end wrench, loosen the outer nut that secures the disk assembly to the disk brackets. Repeat this step for the second side of the disk shaft.

Note:
The drive belt will be hanging from the sheave shaft after you perform the next step.

5. Remove the disk assembly from the disk mounting brackets and away from the drive belt

Diagram 7.16 - The Disk Assembly



Replacing the Disk Assembly

6. Push the disk assembly through the drive belt hanging from the sheave shaft. Position the belt against the disk hub and behind the drive belt idler as you slide the disk assembly into the disk brackets. Push the disk in as far as possible.

Important
Make sure that the remote sensor assembly tabs straddle the disk target (refer back to Diagram 7.6). The outer nuts must be on the outside of the disk brackets.

7. Choose one:

IF...	THEN...
You are replacing a Version A disk assembly	Continue with the next step
You are replacing a Version B disk assembly	Using a 17mm open-end wrench, tighten the outer nuts on each end of the disk axle (see Diagram 7.16); then skip to Step 15

8. Thread a nut onto the longer side of the disk shaft. Using one of the 17mm open-end wrenches, hold the inner nut on the disk assembly. Using the second 17mm open-end wrench, tighten the outer nut that secures the disk assembly to the disk brackets. Repeat this step for the second side of the disk shaft.

9. Place the 0.030" feeler gauge between an inner nut and the disk assembly.

10. Choose one:

IF...	**THEN...**
The .030 feeler gauge fits snugly	Skip to Step 15
The .030 feeler gauge does not fit snugly in the gap between the inner nut and disk assembly	Continue with the next step

11. Remove the disk assembly from the climber as described in Steps 4 and 5. Set the disk assembly on a work bench or table.

12. Using the 17mm open-end wrench, loosen one of the inner nuts on the disk assembly. Place the .030 feeler gauge between the disk assembly and the inner nut.

13. Using the 17mm open-end wrench, tighten the inner nut you loosened in the previous step. Remove the .030 feeler gauge from the disk assembly.

14. Install the disk assembly on the climber as described in Steps 6 through 8.

15. Stand at the back of the climber and face the disk assembly. The drive belt must be positioned over the disk hub and behind the idler pulley (see Diagram 7.16). Line up the drive belt in the center of the grooves on the disk hub.

16. Mount the drive belt on the sheave by performing the following substages:

    a. Kneel on the right side of the climber and face the sheave.

    b. Hold the drive belt between the 12 o'clock and 3 o'clock positions on the sheave rim.

    c. Turn the sheave counterclockwise.

Note:
As you move the sheave, the belt will position itself on the rim.

    d. Grasp the drive belt at the 4 o'clock position.

    e. Turn the sheave counterclockwise to fully seat the belt on the sheave rim.

Note:
Make sure that the belt is on the sheave rim before you continue with this procedure.

17. Kneel behind the stair arms. Press down on the ends of the stair arms. Watch the drive belt as it moves on the sheave, drive belt idler, and disk hub.

18. Choose one:

IF...	**THEN...**
The drive belt has a tracking problem	Continue with the next step
The drive belt tracks correctly	Skip to Step 21

19. Remove the set screws that secure the sheave to the sheave shaft. Gently tap the sheave to re-position it on the sheave shaft.

20. Add a drop of blue loctite to the tip of each set screw. Using the 1/8" allen wrench, replace the set screws on the sheave hub.

21. Return to Step 17.

22. Inspect the gaps between the disk and the magnet assemblies as described in Procedure 5.1.

23. Check the operation of the climber as described in Section Four, then replace the covers as described in Procedure 7.1.

Procedure 7.19 - Replacing the Sheave, Sheave Shaft or Sheave Bearings

Removing the Sheave Assembly

The sheave assembly consists of the sheave, the sheave shaft, and the bearing assemblies.

1. Remove the covers as described in Procedure 7.1.

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

2. Press down a stairarm with one hand. With your other hand, grasp and pull the end of the stairarm belt connected to the return spring. Release the stairarm. Remove the belt from the toothed pulley and idler pulley (refer back to Diagram 7.10). Repeat this step for the second stairarm belt.

3. Choose one:

IF...	THEN...
You are replacing the right sheave bearing	Perform Steps 4 and 5 for the right toothed pulley
You are replacing the left sheave bearing	Perform Steps 4 and 5 for the left toothed pulley
You are replacing both bearings or the sheave shaft or the sheave assembly	Perform Steps 4 and 5 for both toothed pulleys

4. Using the snap ring pliers, remove the retaining ring from the toothed pulley (refer back to Diagram 7.15).

5. Remove the five thrust washers, toothed pulley, and wave washer from the end of the sheave shaft.

6. Loosen the drive belt by pushing down on the top of the drive belt idler arm. Hold the idler arm down while you pull the belt out of the sheave rim. Place the belt on the left end of the sheave shaft.

7. Remove the fasteners that secure the left sheave bearing to the sheave bracket. Repeat this step for the right sheave bearing.

8. Remove the sheave assembly from the sheave brackets and away from the drive belt.

Removing a Bearing From the Sheave Shaft

Set the sheave assembly on a work bench or table when you perform the next step.

9. Remove the loose flange from the end of the sheave shaft (see Diagram 7.17). Remove the set screws that secure the bearing to the sheave shaft. Slide the bearing and second flange from the sheave shaft. Discard the bearing and set aside the set screws and flanges. If you are removing both bearings, repeat this step for the second bearing.

10. If you are replacing the sheave or sheave shaft**...**

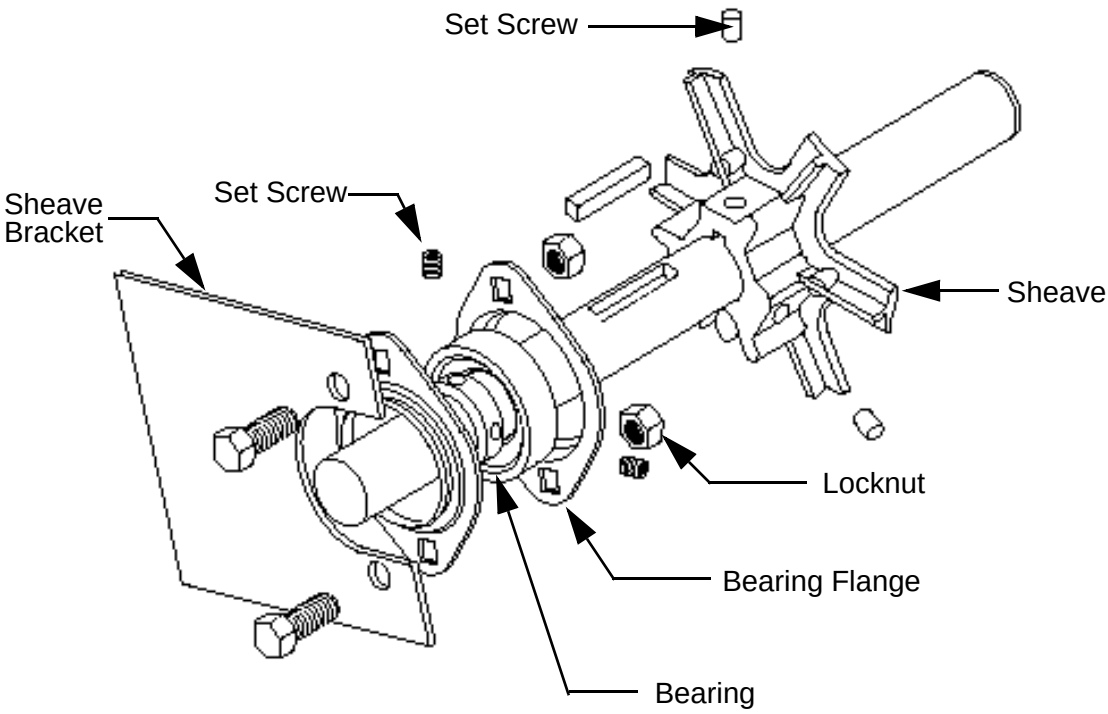
THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 14.

Removing the Sheave From the Sheave Shaft

11. Remove the set screws that secure the sheave to the sheave shaft. Pull the sheave from the shaft.

12. Pry the key out of the key slot on the shaft.

Diagram 7.17 - The Sheave Assembly



Replacing the Sheave On the Sheave Shaft

Look at the key slot on the sheave assembly. The length of shaft to the right of the key slot is longer that the length of shaft to the left of the key slot. When you slide the sheave onto the shaft, make sure that the sheave hub faces the left end of the shaft.

13. Position the key in the key slot in the sheave shaft. Push the sheave shaft through the sheave so that the key is centered on the key slot in the sheave.

Note:
When you slide the sheave onto the shaft, make sure that the sheave hub faces the left end of the shaft.

Replacing the Bearing On the Sheave Shaft

14. Slide the two flanges and a bearing onto one end of the shaft. A flange must be on each side of the bearing as seen in Diagram 7.16. The flange shoulders must face away from the bearing. If you are replacing both bearings, repeat this step for the second bearing.

Replacing the Sheave Assembly

When you install the sheave assembly, the hub must be on the left side of the climber.

15. Stand at the back of the climber and face the disk assembly. The drive belt must be positioned over the disk hub and behind the drive belt idler (refer back to Diagram 7.15). Line up the drive belt in the center of the grooves on the disk hub.

Note:
Place the four flanges inside of the sheave brackets when you perform the next step.

16. Lift the drive belt from the disk hub. Push the sheave assembly through the belt. Place the belt on the sheave shaft as you slide the sheave assembly into the sheave brackets (see Diagram 7-.18).

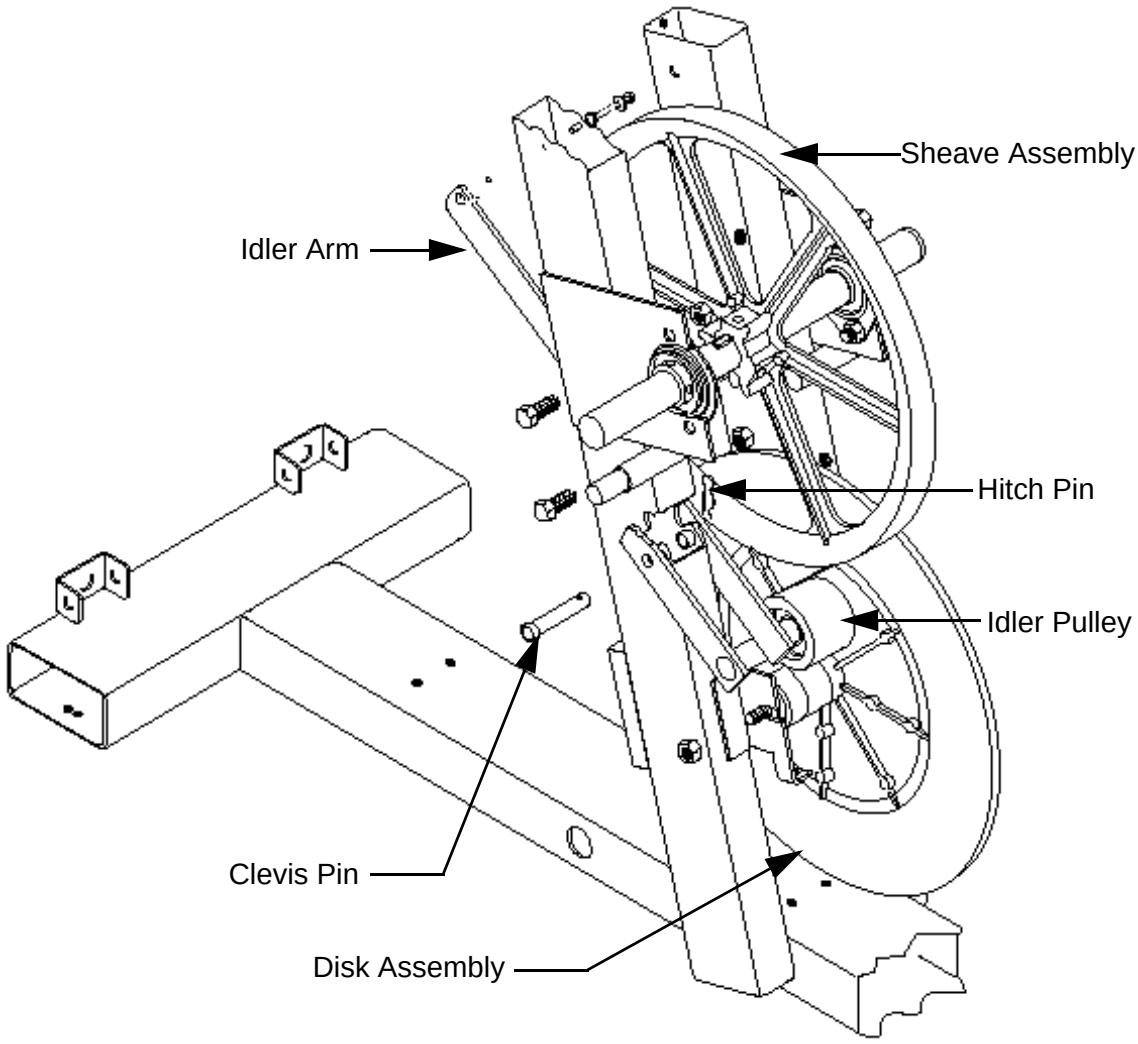
Note:
Perform Steps 17 through 19 for each bearing you are mounting on the sheave shaft.

17. Hold the flange on one end of the sheave shaft against the sheave bracket. Place two bolts through the sheave bracket and flange.

18. Slide the bearing next to the sheave bracket. Hold the bearing in place.

19. Slide the second flange next to the bearing and onto the bolts positioned through the first flange and sheave bracket. Using your fingers, thread the two locknuts onto the bolts.

Diagram 7.18 - The Sheave Assembly



20. Mount the drive belt on the sheave by performing the following sub-steps:

    a. Kneel on the right side of the climber and face the sheave.

    b. Hold the drive belt between the 12 o'clock and 3 o'clock positions on the sheave rim.

    c. Turn the sheave counterclockwise.

Note:
As you move the sheave, the belt will position itself on the rim.

    d. Grasp the drive belt at the 4 o'clock position.

    e. Turn the sheave counterclockwise to fully seat the belt on the sheave rim.

Note:
Make sure that the belt is on the sheave rim before you continue with this procedure.

Installing the Toothed Pulleys and Toothed Belts

21. Slide a thrust washer, the wave washer, and three more thrust washers onto one end of the sheave shaft.

21. Slide the toothed pulley and the remaining thrust washer onto the sheave shaft. Using the snap ring pliers, install the retaining ring next to the thrust washer.

21. Lift the stair arm assembly from the frame weldment. Grasp the belt and lift it over the toothed pulley. Route the belt under the idler pulley.

21. If you are installing both of the toothed pulleys and belts, repeat Steps 21 through 23 for the remaining toothed pulley and belt.

Checking the Alignment of the Belts

22. Kneel behind the stairarms. Press down on the ends of the stairarms. Watch the belts as they move over the toothed pulleys and idlers pulleys.

23. If the belts are centered on the toothed pulleys and idlers pulleys**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 29.

Note:
Do not remove the bolts from the sheave brackets and outer flanges when you perform the next step.

24. Remove the locknuts that are holding the right bearing flanges to the sheave bracket. Remove the inner flange from the bolts. Repeat this step for the left bearing flanges.

25. Skip to Step 34.

Note:
To center the belts on the toothed pulleys, you must re-position the sheave assembly. Remove the bolts that secure the bearing flanges to the mounting brackets to move the sheave assembly as described in Step 28.

26. Remove the locknuts and bolts that are holding the right bearing flanges to the sheave bracket. Repeat this step for the left bearing flanges.

27. Re-position the sheave assembly.

Note:
The bearing flanges secure the sheave assembly to the climber frame. Install the sheave assembly to the climber frame as described in Steps 31 through 36.

28. Hold an outer flange next to the sheave bracket. Place bolts through the sheave bracket and flange. Repeat this step for the second outer flange.

29. Slide the bearing next to the outer flange. Hold the bearing in place.

30. Add a drop of blue loctite to the tip of two set screws. Install the set screws on the sheave bearing.

31. Slide the inner flange next to the bearing and onto the bolts positioned through the outer flange and sheave bracket.

32. Install the locknuts that secure the flanges to the sheave bracket.

33. Repeat Steps 28 through 33 for the sheave bearing and flanges on the opposite side of the sheave shaft.

Checking the Alignment of the Drive Belt

34. Kneel behind the stair arms. Press down on the ends of the stair arms. Watch the drive belt as it moves on the sheave, drive belt idler, and disk hub.

35. If the drive belt does not track correctly**...**

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

Note:
Adjust drive belt tracking by re-positioning the sheave on the sheave shaft as described in Step 28. Secure the sheave to the sheave shaft with the set screws removed from the sheave in Step 11.

36. Gently tap the sheave to re-position it on the sheave shaft.

37. Add a drop of blue loctite to the tip of each set screw. Install the screws on the sheave hub.

38. Check the operation of the climber as described in Section Four, then replace the covers as described in Procedure 7.1.

Procedure 7.20 - Replacing the Drive Belt

Removing the Drive Belt

1. Remove the covers as described in Procedure 7.1.

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

2. Loosen the drive belt by pushing down on the top of the drive belt idler arm. Hold the idler arm down while you pull the belt out of the sheave rim. Place the belt on the left end of the sheave shaft.

3. Press down the stairarm with one hand. With your other hand, grasp and pull the end of the toothed belt connected to the return spring. Release the stairarm. Remove the belt from the toothed pulley and idler pulley (refer back to Diagram 7.10).

4. Remove the fasteners that secure the right bearing flanges to the sheave bracket. Repeat this step for the left bearing flanges.

5. Remove the sheave & toothed pulley assembly from the sheave brackets.

6. Using the 17mm open-end wrench, loosen the outer nuts on each end of the disk axle (refer back to Diagram 7.16).

7. Slide the disk assembly out of the disk brackets and away from the drive belt. Remove the belt from the climber.

Replacing the Drive Belt

8. Push the disk assembly through the new drive belt. Position the belt against the disk hub and behind the drive belt idler as you slide the disk assembly into the disk brackets (refer back to Diagram 7.16).

Important
Make sure that the remote sensor assembly tabs straddle the disk target (refer back to Diagram 7.6). The outer nuts loosened in Step 6 must be on the outside of the disk brackets.

9. Using the 17mm open-end wrench, tighten the outer nuts on each end of the disk axle.

10. Lift the drive belt from the disk hub. Push the sheave assembly through the belt. Place the belt on the sheave shaft as you slide the sheave assembly into the sheave brackets (refer back to Diagram 7.18).

11. Slide the flanges and bearing on the right end of the sheave shaft next to the sheave bracket. Place two bolts through the sheave bracket and flanges.

12. Install the locknuts that secure the flanges to the sheave bracket.

13. Repeat Steps 11 and 12 for the flanges and bearing on the left end of the sheave shaft.

14. Stand at the back of the climber and face the disk assembly. The drive belt must be positioned over the disk hub and behind the drive belt idler (refer back to Diagram 7.16). Line up the drive belt in the center of the grooves on the disk hub.

15. Mount the drive belt on the sheave by performing the following sub-steps:

    a. Kneel on the right side of the climber and face the sheave.

    b. Hold the drive belt between the 12 o'clock and 3 o'clock positions on the sheave rim.

    c. Turn the sheave counterclockwise.

Note:
As you move the sheave, the belt will position itself on the rim.

    d. Grasp the drive belt at the 4 o'clock position.

    e. Turn the sheave counterclockwise to fully seat the belt on the sheave rim.

Note:
Make sure that the belt is on the sheave rim before you continue with this procedure.

16. Kneel behind the stair arms. Press down on the ends of the stair arms. Watch the drive belt as it moves on the sheave, drive belt idler, and disk hub.

17. Choose one:

IF...	**THEN...**
The drive belt has a significant tracking problem	Continue with the next step
The drive belt has a minor tracking problem	Skip to Step 24
The drive belt tracks correctly	Skip to Step 27

18. Using the 17mm open-end wrench, loosen the outer nuts on each end of the disk axle. Remove the disk assembly from the disk mounting brackets and away from the drive belt.

19. Using the 17mm open-end wrench, loosen the inner nuts on the disk assembly.

20. Re-position the nuts on the disk axle. Using the 17mm open-end wrench, tighten the inner nuts on the disk assembly.

21. Push the disk assembly through the drive belt. Position the belt against the disk hub and behind the drive belt idler as you slide the disk assembly into the disk brackets.

Important
Make sure that the remote sensor assembly tabs straddle the disk target.

22. Using the 17mm open-end wrench, tighten the outer nuts on each end of the disk axle.

23. Return to Step 14.

24. Remove the set screws that secure the sheave to the sheave shaft. Gently tap the sheave to re-position it on the sheave shaft.

25. Add a drop of blue loctite to the tip of each set screw. Install the screws on the sheave hub.

26. Return to Step 16.

27. Inspect the gaps between the disk and the magnet assemblies as described in Procedure 5.1.

28. Check the operation of the climber as described in Section Four, then replace the covers as described in Procedure 7.1.

Procedure 7.21 - Replacing the Idler Spring or Drive Belt Idler

Procedure

1. Remove the covers as described in Procedure 7.1.

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

2. Loosen the drive belt by pushing down on the top of the drive belt idler arm. Hold the idler arm down while you pull the belt out of the sheave rim. Place the belt on the left end of the sheave shaft.

3. Remove the spring from the top of the drive belt idler arm.

4. If you are replacing the idler spring**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 9.

Removing the Idler Spring

An exploded view of the idler spring assembly is shown in Diagram 7.19.

5. Remove the outer locknut on the idler spring assembly. Remove the idler spring assembly from the frame upright.

6. Remove the inner locknut on the idler spring assembly. Remove the idler spring from the screw.

Replacing the Idler Spring

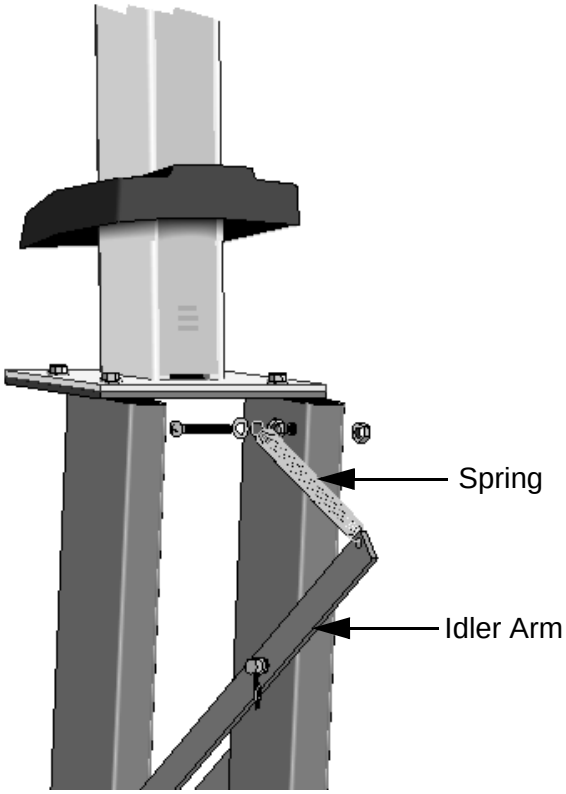
7. Place the new spring on the screw. Install the inner locknut on the idler spring assembly.

8. Push the idler spring assembly through the frame upright. Install the outer locknut on the idler spring assembly.

9. If you are replacing the drive belt idler**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Skip to Step 18.

Diagram 7.19 - Idler Arm Assembly



Removing the Drive Belt Idler

10. Using the needle nose pliers, remove the hitch pin from the clevis pin that secures the idler arm to the climber frame. Hold the idler arm while you remove the clevis pin from the climber frame.

Note:
Set the idler arm assembly on a work bench while you perform the following steps.

11. Remove the retaining ring from the drive belt idler.

12. Slide the drive belt idler and wave washer from the idler shaft weldment.

Replacing the Drive Belt Idler

13. Visually inspect the wave washer removed in Step 12 for wear or damage. If the visual inspection indicates no wear or damage**...**

THEN...	**OTHERWISE...**
Use the original washer when you perform the next step.	Use a new washer when you perform the next step.

14. Place the wave washer and drive belt idler onto the idler shaft weldment.

15. Install the retaining ring next to the drive belt idler.

16. Have an assistant position the idler arm assembly at its mounting position on the climber frame. Push the clevis pin through the climber frame and idler arm assembly. Push the hitch pin into the clevis pin.

17. Route the drive belt over the disk hub and behind the drive belt idler (refer back to Diagram 7.16).

18. Using the needle nose pliers, place the spring in the top of the drive belt idler arm.

19. Mount the drive belt on the sheave by performing the following sub-steps:

    a. Kneel on the right side of the climber and face the sheave.

    b. Hold the drive belt between the 12 o'clock and 3 o'clock positions on the sheave rim.

    c. Turn the sheave counterclockwise.

Note:
As you move the sheave, the belt will position itself on the rim.

    d. Grasp the drive belt at the 4 o'clock position.

    e. Turn the sheave counterclockwise to fully seat the belt on the sheave rim.

Note:
Make sure that the belt is on the sheave rim before you continue with this procedure.

20. Kneel behind the stair arms. Press down on the ends of the stair arms. Watch the drive belt as it moves on the sheave, drive belt idler, and disk hub. If the drive belt does not track correctly**...**

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

21. Remove the set screws that secure the sheave to the sheave shaft.

22. Gently tap the sheave to re-position it on the sheave shaft.

23. Add a drop of blue loctite to the tip of each set screw. Replace the screws on the sheave hub.

24. Return to Step 20.

25. Check the operation of the climber as described in Section Four, then replace the covers as described in Procedure 7.1.

Procedure 7.22 - Replacing a Stair Arm Assembly

Removing the Stair Arm Assembly

1. Remove the covers as described in Procedure 7.1.

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

2. Press down the stairarm with one hand. With your other hand, grasp and pull the end of the toothed belt connected to the return spring. Release the stairarm. Remove the belt from the pulley and belt idler (refer back to Diagram 7.10).

3. Remove the fasteners that secure the belt clamp to the pedal. Pull the belt out of the hole in the stair arm foot pad. Set aside the belt clamp and toothed belt.

4. Remove the retaining rings and nylon washers from the stair arm assembly (see Diagram 7.20)

5. Grasp the two arms and foot pad on the stair arm assembly. Slide the stair arm assembly from the stair arm shaft weldments.

6. If you are replacing one stair arm assembly only**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 2 through 5 for the second stair arm assembly; then continue with the next step.

Replacing the Stair Arm Assembly

7. Slide the stair arm assembly and nylon washers onto the stair arm shaft weldments.

8. Install the retaining rings on the stair arm assembly.

9. Route the loose end of the toothed belt through the front of the pedal (refer back to Diagram 7.13).

10. Place and hold the end of the belt against the belt clamp weldment on the underside of the pedal. The end of the belt should be flush with the end of the clamp.

11. Place the belt clamp against the belt positioned in the previous step.

Note:
Hold the belt clamp against the belt and slotted area on the underside of the pedal when you perform the next step.

12. Install the fasteners that secure the belt clamp to the pedal.

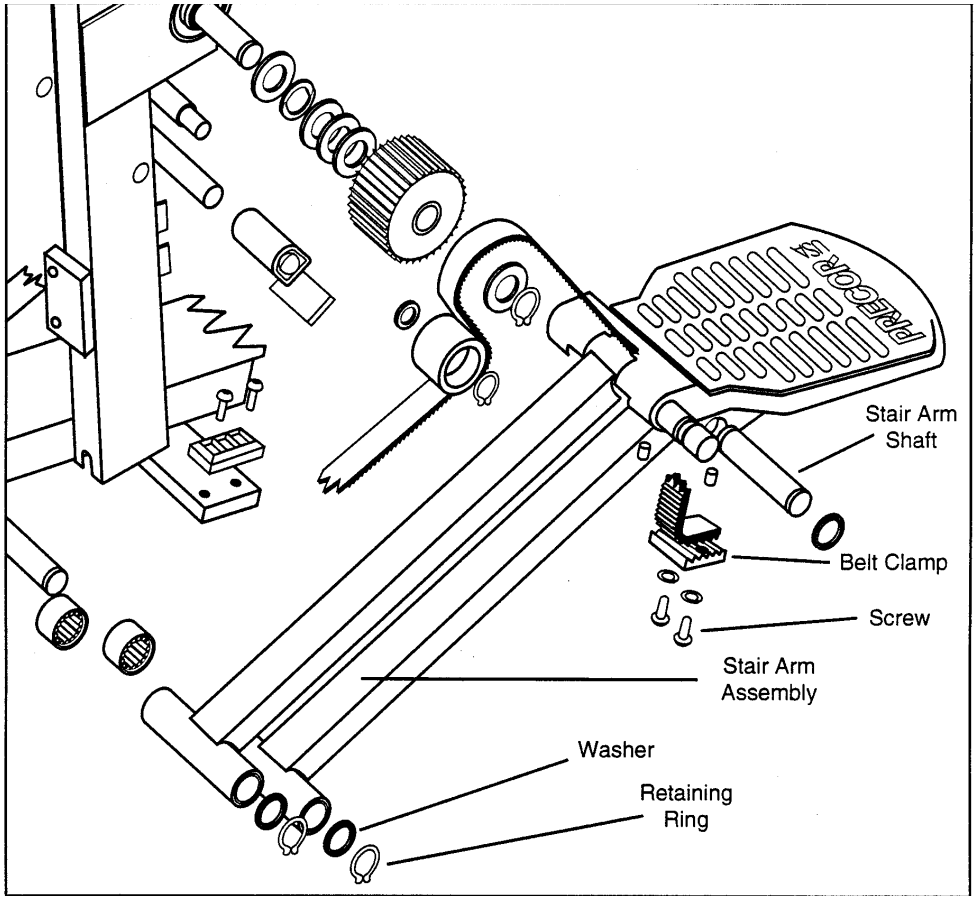
13. Lift the stair arm assembly from the frame weldment. Grasp the toothed belt and lift it over the toothed pulley. Route the belt under the idler pulley.

14. If you are replacing one stair arm assembly only**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 7 through 13 for the second stair arm assembly; then continue with the next step.

15. Check the operation of the climber as described in Section Four, then replace the covers as described in Procedure 7.1

Diagram 7.20 - Stairarm Assembly



Procedure 7.23 - Replacing a Handlebar Assembly

Removing the Handlebar Assembly

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

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

2. Slide the handlebar boot up on the handlebar.

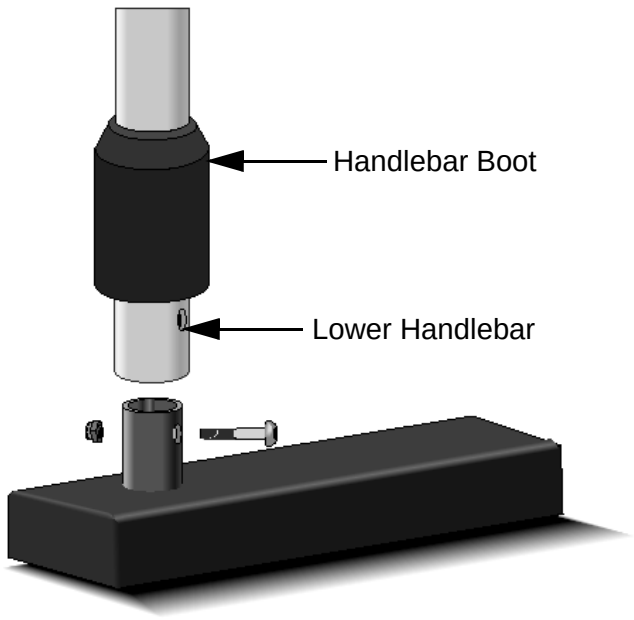
3. Remove the fasteners that secure the lower end of the handlebar assembly to the handlebar post (see Diagram 7.21). Set aside the button head screw and locknut.

Note:
Do not remove the handlebar assembly from the post at this time.

4. Loosen the fasteners that secure the handlebar assemblies to the upper handlebar clamp. Slide the handlebars out of the handlebar clamp.

5. Remove the handlebar assembly from the handlebar post by lifting the assembly up and to the side of the handlebar post. Remove the handlebar boot from the handlebar. Set aside the handlebar and boot.

Diagram 7.21 - Lower Handlebar Assembly



6. If you are replacing only one handlebar assembly**...**

THEN...	**OTHERWISE...**
Continue with the next step.	Repeat Steps 2 through 5 for the second handlebar assembly; then continue with the next step.

Replacing the Handlebar Assembly

7. Slide the handlebar boot onto the handlebar.

Note:
Be sure to mount the bell-shaped boot properly. The wide portion of the bell should be facing toward the base.

8. Slide the lower end of the handlebar assembly onto the handlebar post.

9. Push the upper end of the handlebar assembly into the upper handlebar clamp until the foam grip is flush with the clamp.

10. Install the fasteners that secure the lower end of the handlebar assembly to the handlebar post (refer back to Diagram 7.21).

11. Slide the handlebar boot the handlebar until it is flush with the frame weldment.

12. Repeat Steps 7 through 11 if you are replacing both handlebar assemblies.

13. Tighten the fasteners that secure the handlebar assemblies to the upper handlebar clamp.

Procedure 7.24 - Replacing the Column

Removing the Column

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

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

2. Remove the handlebar assemblies as described in Procedure 7.24.

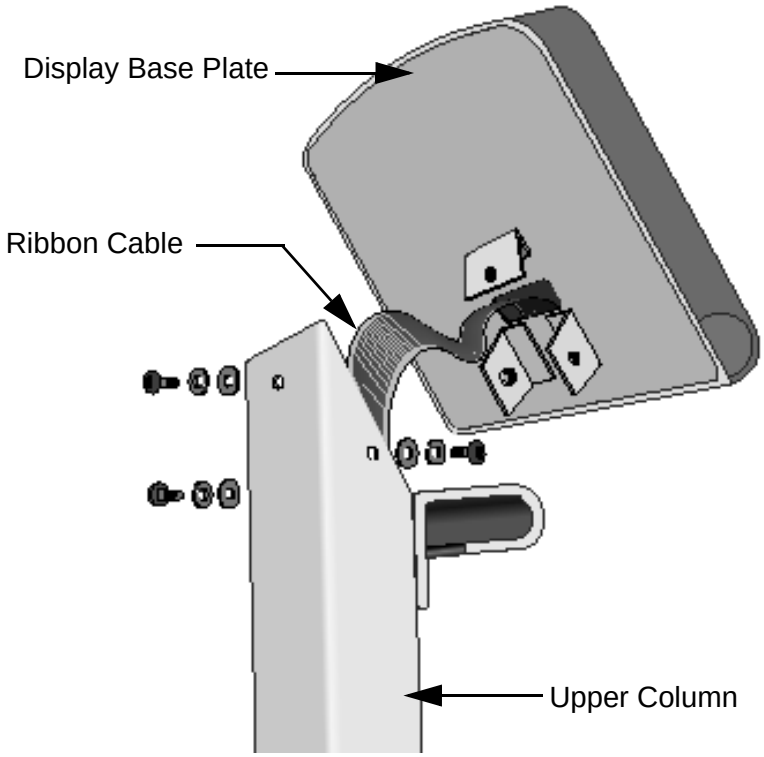
3. Remove the fasteners that secure the upper handlebar clamp to the column.

4. Slide the enclosure collar up on the column.

5. Disconnect the lower ribbon cable from the upper ribbon cable.

6. Remove the fasteners that secure the display base plate to the column (see Diagram 7.22). Hold the display to prevent it from being damaged.

Diagram 7.22 - Upper Column and Display Base Plate



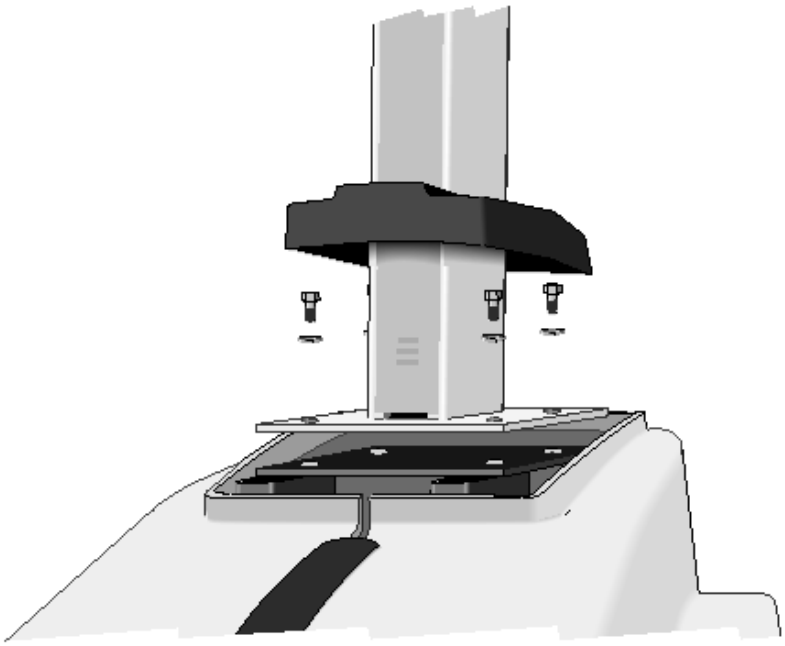
Note:
It may be necessary to push the upper ribbon cable connector into the hole at the base of the column when you perform the next step.

7. Remove the display base plate and display housing assembly from the top of the column. The ribbon cable will be pulled out of the column as you lift the display base plate and display housing assembly.

Note:
When you perform the next step, make sure that the column mounting hardware does not fall into the climber.

8. Remove the fasteners that secure the column to the climber frame (see Diagram 7-23). Set aside the column.

Diagram 7.23 - Upper Column Mounting



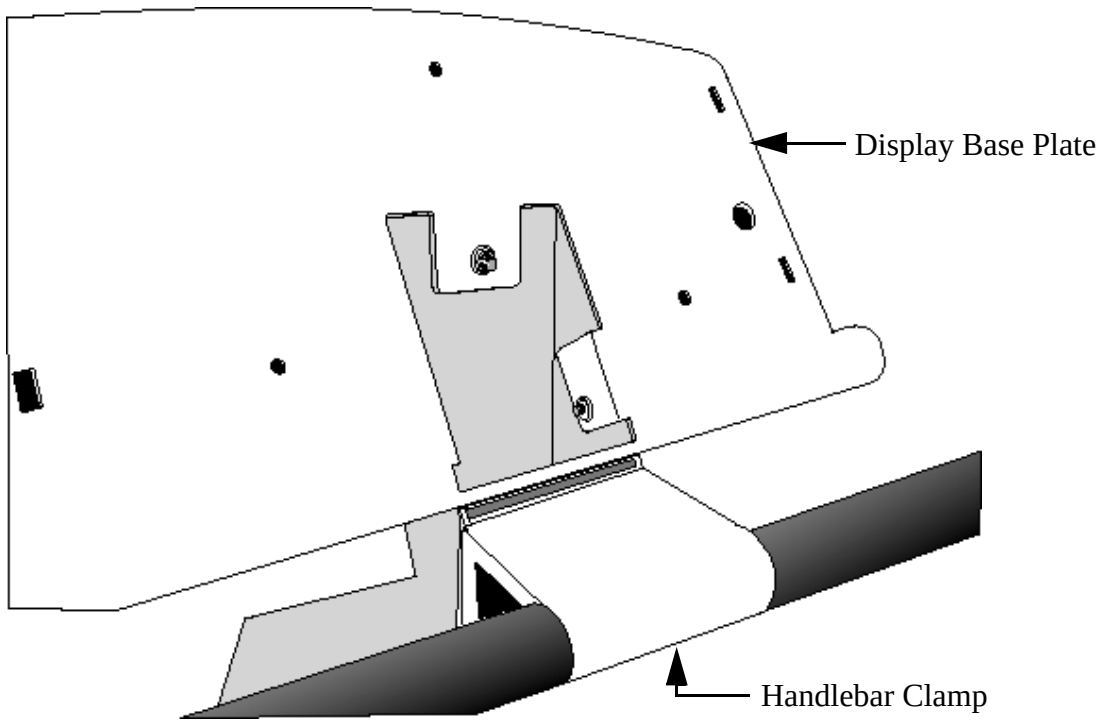
Replacing the Column

9. Install the fasteners that secure the column to the climber frame.

10. Push the loose end of the upper ribbon cable through the top of the column. Pull the end of the cable through the slot on the lower end of the column. Connect the cable to the lower ribbon cable (refer back to Diagram 7.5).

Note:
Gently push any excess cable into the column

Diagram 7.24 - Display Base Plate



11. Position the display base plate on top of the column. Line up the tabs on the back of the display base plate with the holes in the sides of the column.

12. Install the fasteners that secure the display base plate to the column.S

13. Slide the enclosure collar down the column and over the column mounting screws. Press down to ensure a snug fit.

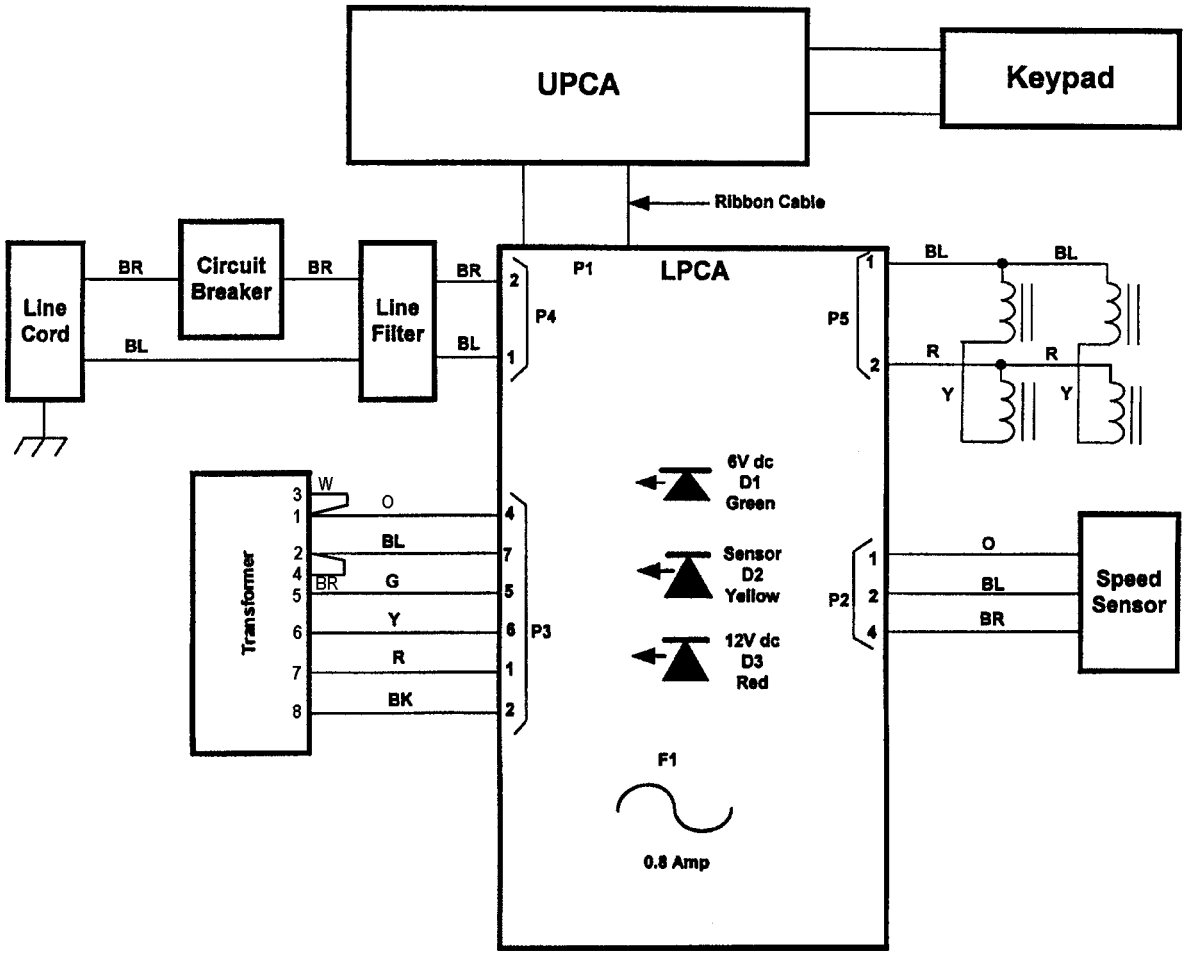
14. Position the upper handlebar clamp next to the column. Position the upper handlebar clamp so that it is parallel to the display base plate (see Diagram 7.24).

15. Install the fasteners that secure the upper handlebar clamp to the column.

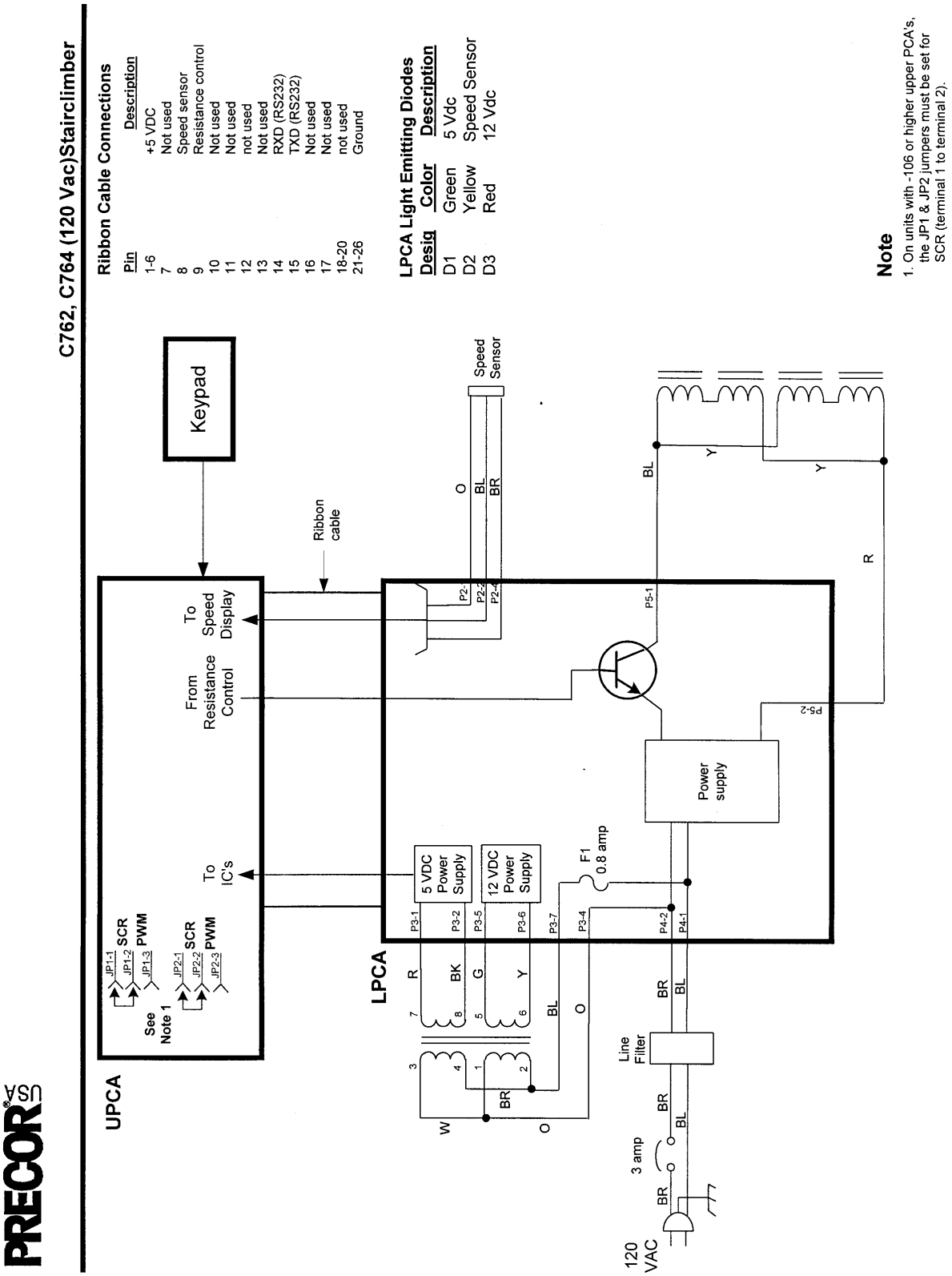
16. Replace the handlebar assemblies as described in Procedure 7.23.

17. Check the operation of the climber as described in Section Four, Checking Unit Operation.

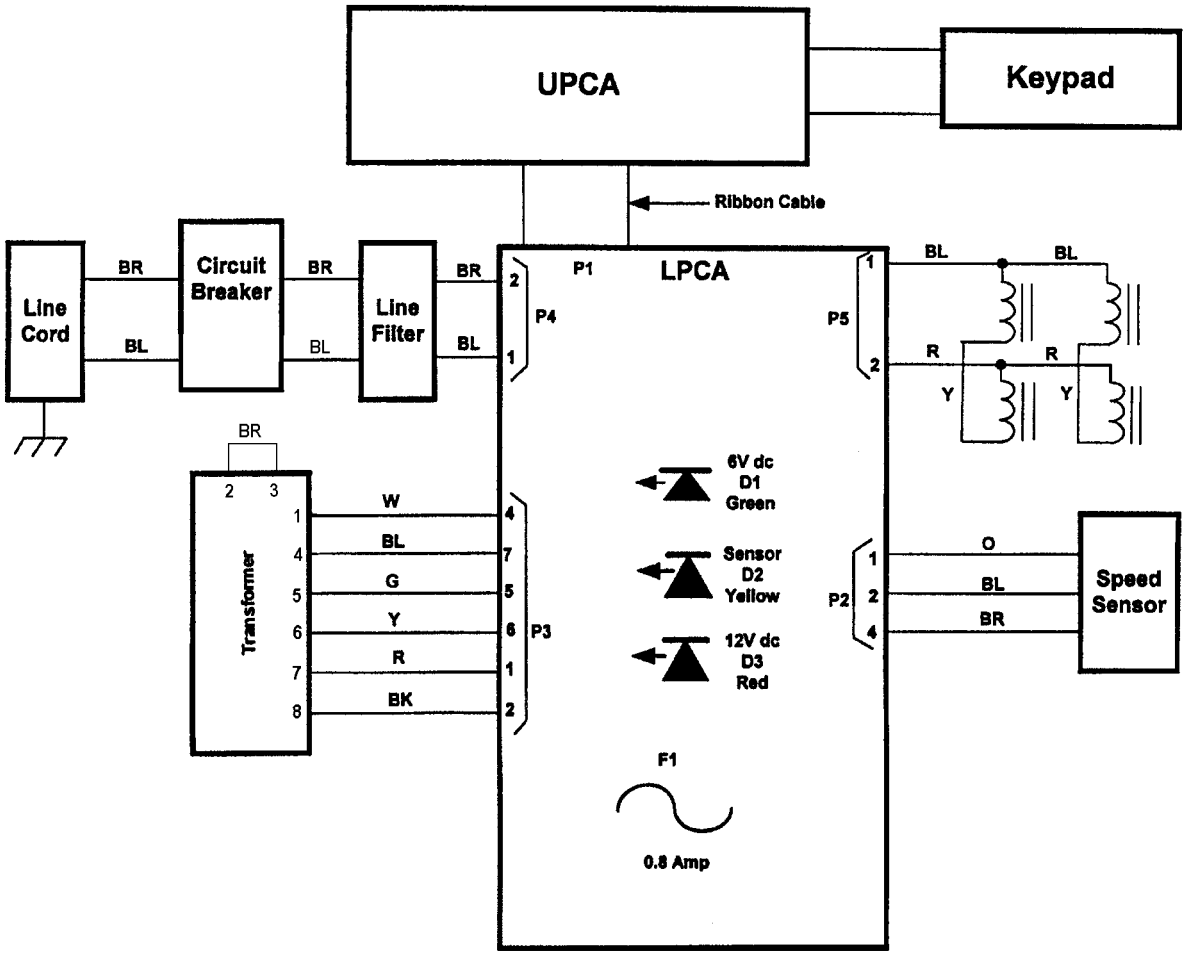
Wiring Diagram 8.1 - C762, C764 (120 Vac)



Block Diagram 8.2 - C762, C764 (120 Vac)



Wiring Diagram 8.3 - C762, C764 (240 Vac)



Block Diagram 8.4 - C762, C764 (240 Vac)