



**Cybex Arc Trainer 610A**  
**Service Manual**  
Cardiovascular Systems  
May 2004

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### ***About This Manual***

The Service Manual is available in pdf format only. Contact Customer Service at 800-766-3211 or 508-533-4300.

To contact Cybox with comments about this manual you may send email to [techpubs@cyboxintl.com](mailto:techpubs@cyboxintl.com).

### ***FCC Compliance Information***

***! WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.***

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment off and on) the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

## **Declaration of Conformity**

We declare that to the best of our knowledge that the fitness equipment listed below, and manufactured by:

Cybox International, Inc.  
10 Trotter Drive  
Medway MA, 02053, USA

Conforms to:

Directives: 73/23/EEC, 89/336/EEC

Standards: EN60335-1, EN55081-1, EN55014-1, EN61000-3-2,  
EN61000-3-3, EN 957-1

Product Name: Cybox Arc Trainer 610A  
Models: 610A  
European Contact: Attention: European Sales Director  
Floor 2, 56 Bridge Street,  
Newport, South Wales, NP20 4BL  
United Kingdom Phone 011-44-1633-251222

# Table of Contents

## Front Pages

About this Manual . . . . .	i
FCC Compliance Information . . . . .	i
Table of Contents . . . . .	iii

## 1 Safety

Important Voltage Information . . . . .	1-1
Grounding Instructions . . . . .	1-1
Important Safety Instructions . . . . .	1-2
Warning Decals . . . . .	1-4
Caution Decals . . . . .	1-7

## 2 Preventive Maintenance

Warnings/Cautions . . . . .	2-1
Regular Maintenance Activities . . . . .	2-1
Cleaning Your Cybex Arc Trainer . . . . .	2-2
Drive Belt Maintenance . . . . .	2-3
Lubrication . . . . .	2-5
Environment of the Arc Trainer . . . . .	2-5
Service Schedule . . . . .	2-6

## 3 Customer Service

Contacting Service . . . . .	3-1
Serial Number & Voltage . . . . .	3-1
Return Material Authorization (RMA) . . . . .	3-1
Damaged Parts . . . . .	3-3
Ordering Parts . . . . .	3-3

## 4 Service

Warnings/Cautions . . . . .	4-1
Test Mode . . . . .	4-2
LED Functions . . . . .	4-3
Key Functions . . . . .	4-3
Error Codes . . . . .	4-4
Speed Sensor Adjustment . . . . .	4-5
Drive Belts . . . . .	4-7
Eddy Current Brake . . . . .	4-13
Elevation Motor . . . . .	4-16
Power Switch . . . . .	4-20
Upper Pillow Blocks . . . . .	4-22
Lower Pillow Blocks . . . . .	4-26
Arm and Handle Link . . . . .	4-28
Pedal Arm and Foot Plates . . . . .	4-30
Lower Control Board . . . . .	4-31
Lower Control Board Fuses . . . . .	4-33
Upper Display Board . . . . .	4-34
Upper Display Cable . . . . .	4-36
Lower Display Cable . . . . .	4-37
Display Overlays . . . . .	4-41
Parts List . . . . .	4-43
Exploded Views . . . . .	4-45
Schematic . . . . .	4-53

# 1 - Safety

**IMPORTANT:** Read all instructions and warnings before using the unit.

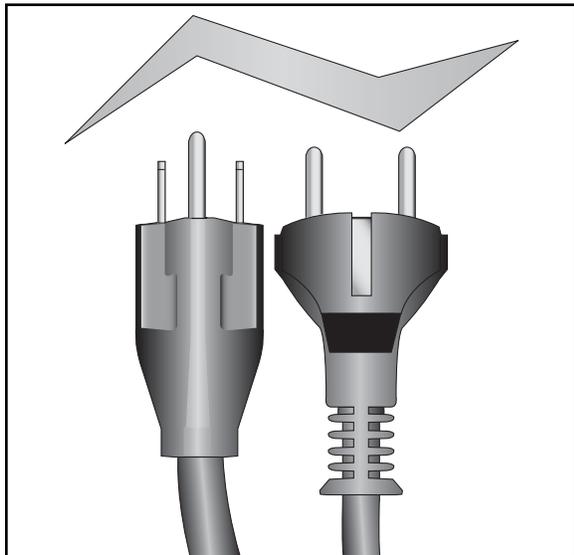
## Important Voltage Information

Before plugging the power cord into an electrical outlet, verify that the voltage requirements for your area match the voltage of the unit that you have received. The power requirements for the unit include a grounded circuit, rated for one of the following: 115 VAC  $\pm 5\%$ , 50/60 Hz and 15 amps; or 230 VAC  $\pm 10\%$ , 50/60 HZ and 10 amps. See the voltage requirement decal for the exact voltage requirements of your unit.

**! WARNING:** Do not attempt to use this unit with a voltage adapter. Do not attempt to use this unit with an extension cord.

## Grounding Instructions

This unit must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.



115V  
NEMA 5-15

Euro Plug  
CEE 7/7

**! DANGER:** Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service provider if you are in doubt as to whether the unit is properly grounded. Seek a qualified electrician to perform any modifications to the cord or plug. Cybox is not responsible for injuries or damages as a result of cord or plug modification.

This unit is for use on a nominal 115 VAC  $\pm 5\%$ , 50/60 Hz and 15 amps; or 230 VAC  $\pm 10\%$ , 50/60 Hz and 10 amps and a grounded circuit. Make sure that the unit is connected to an outlet having the same configuration as the plug. Do not use a ground plug adapter to adapt the power cord to a non-grounded outlet.

**Important Safety Instructions**

(Save These Instructions)

***! DANGER: To reduce the risk of electric shock, always unplug this unit from the electrical outlet immediately after using it and before cleaning it.***

***! WARNING: Serious injury could occur if these precautions are not observed. To reduce the risk of burns, fires, electric shock, or injury:***

**User Safety Precautions**

- Keep children away. Teenagers and disabled must be supervised. Tenez les enfants éloignés. Les adolescents et les handicapés doivent être surveillés.
- Obtain instruction before using. Lisez les instructions avant l'utilisation.
- Wait until foot plates come to a complete stop before dismounting. Attendre l'arrêt complet des repose pieds avant de descendre.
- Obtain a medical exam before beginning any exercise program.
- Stop exercising if you feel faint, dizzy, or experience pain.
- Read and understand the Owner's Manual and all warnings posted on the unit before using.
- DO NOT wear loose or dangling clothing while using.
- Keep all body parts, towels, and the like free and clear of moving parts.
- Use the handrails for support and to maintain balance.
- DO NOT use the unit if you exceed 400 lbs. (180 kg). This is the rated maximum user weight.
- Replace any warning labels if damaged, worn or illegible.
- Report any malfunctions, damage or repairs to the facility.
- Wait until foot plates come to a complete stop before dismounting.
- All maintenance activities shall be performed by qualified personnel. Failure to do so could result in serious injury.
- DISCONNECT POWER BEFORE SERVICING.
- Moving parts. Keep hands away when in use.

### **Facility Safety Precautions**

- Make sure all user and safety precautions are observed.
- Read and understand the Owner's Manual completely before using the unit.
- Make sure all users are properly trained on how to use the equipment.
- Make sure that each machine is setup and operated on a solid level surface. Do not install equipment on an uneven surface.
- Perform regular maintenance checks on the equipment. Also pay close attention to all areas most susceptible to wear, including (but not limited to) cables, pulleys, belts and grips.
- Immediately replace worn or damaged components. If unable to immediately replace worn or damaged components then remove from service until the repair is made.
- Do not attempt repairs, electrical or mechanical. Seek qualified repair personnel when servicing. If you live in the USA, contact Cybex Customer Service at 800-766-3211. If you live outside the USA, contact Cybex Customer Service at 508-533-4300.
- Disconnect all power before servicing the unit.
- Keep a repair log of all maintenance activities.
- Use only Cybex supplied components to maintain/repair the equipment.
- Do not use attachments unless recommended for the unit by Cybex.
- Do not operate the unit if: (1) the cord is damaged; (2) the unit is not working properly or (3) if the unit has been dropped or damaged. Seek service from a qualified technician.
- Do not operate electrically powered units in damp or wet locations.
- Do not operate the unit around or where aerosol (spray) or where oxygen products are being used.
- Do not use the unit outdoors.

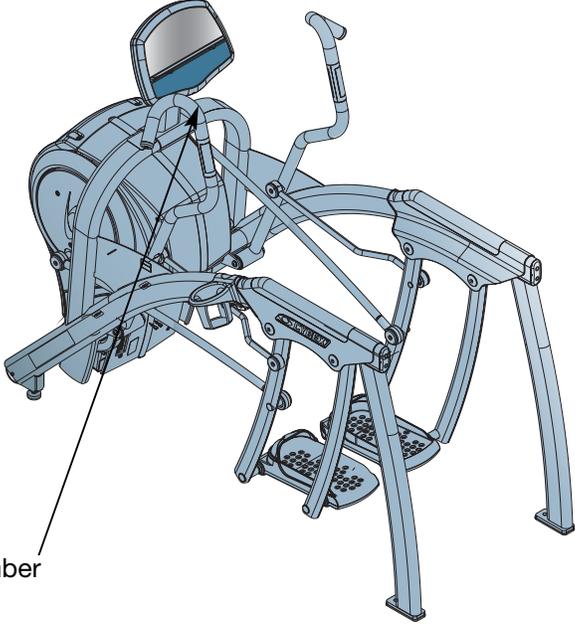
**NOTE:** *It is the sole responsibility of the user/owner or facility operator to ensure that regular maintenance is performed.*

**Warning Decals**

Carefully read and understand the following before using the unit:

**NOTE:** To replace any worn or damaged decals do one of the following: Visit [www.cybexinternational.com](http://www.cybexinternational.com) to shop for parts online, fax your order to 508-533-5183 or contact Cybex Customer Service at 800-766-3211. If you live outside of the USA, call 508-533-4300.

Warning decals indicate a potentially hazardous situation, which, if not avoided, could result in death or serious injury. The warning decals are shown below.



Warning decal part number  
610A-349-4

<p><b>⚠ WARNING</b></p>	<p>Keep children away. Teenagers and disabled must be supervised. <i>Tenez les enfants éloignés. Les adolescents et les handicapés doivent être surveillés.</i></p>	<p>Read and understand the Owner's Manual and all warnings posted on the unit before using.</p>
<p><b>SERIOUS INJURY COULD OCCUR IF THESE PRECAUTIONS ARE NOT OBSERVED</b></p>	<p>Obtain instruction before using. <i>Lisez les instructions avant l'utilisation.</i></p>	<p>DO NOT wear loose or dangling clothing while using.</p>
	<p>Wait until foot plates come to a complete stop before dismounting. <i>Attendre l'arrêt complet des reposés pieds avant de descendre.</i></p>	<p>Keep all body parts, towels, and the like free and clear of moving parts.</p>
	<p>Obtain a medical exam before beginning any exercise program.</p>	<p>Use the handrails for support and to maintain balance.</p>
	<p>Stop exercising if you feel faint, dizzy, or experience pain.</p>	<p>DO NOT use the unit if you exceed 400 lbs. (180 kg). This is the rated maximum user weight.</p>
		<p>Replace any warning labels if damaged, worn or illegible.</p>
		<p>Report any malfunctions, damage or repairs to the facility. 610A-349-4</p>

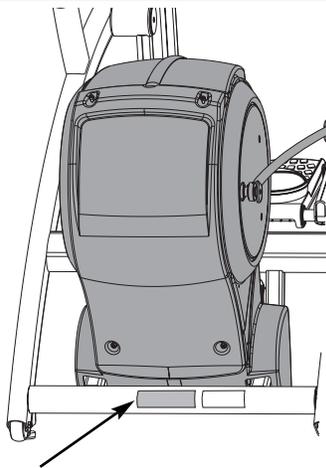


Underneath  
Access Cover

**WARNING**

*All maintenance activities shall be performed by qualified personnel. Failure to do so could result in serious injury.*

Warning decal part number - DE-17322-4



Warning decal part number  
CM000240

**WARNING**    **WARNING**    **警告**    **VARNING**  
**AVERTISSEMENT**    **ADVERTENCIA**

DISCONNECT POWER BEFORE SERVICING.	DÉBRANCHEZ L'ALIMENTATION AVANT DE FAIRE L'ENTRETIEN	VOR SERVICEAR- BEITEN NETZSTECKER ZIEHEN.	CORTE LA ENERGIA ELECTRICA ANTES DE REPARAR.	修理点検の前に 電源を 切ってください。	KOPPLA IFRÅN STRÖMMEN INNAN SERVICE UTFÖRS.
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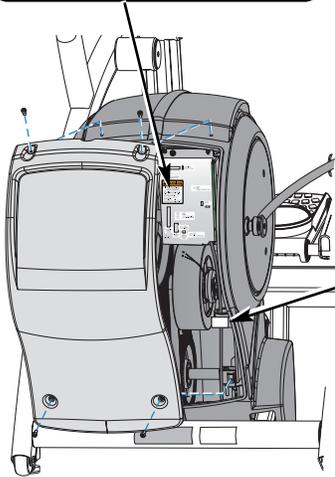
CM000240

**! WARNING**

**SERIOUS INJURY COULD OCCUR  
IF THESE PRECAUTIONS  
ARE NOT OBSERVED**

High voltage is present under this shield. This shield should only be removed by a qualified service technician.  
Keep wet items away from inside parts.  
High voltage may still be present even if the unit is unplugged.

Shield part number  
PL-17237-4



Warning decal part number  
DE-17155-4

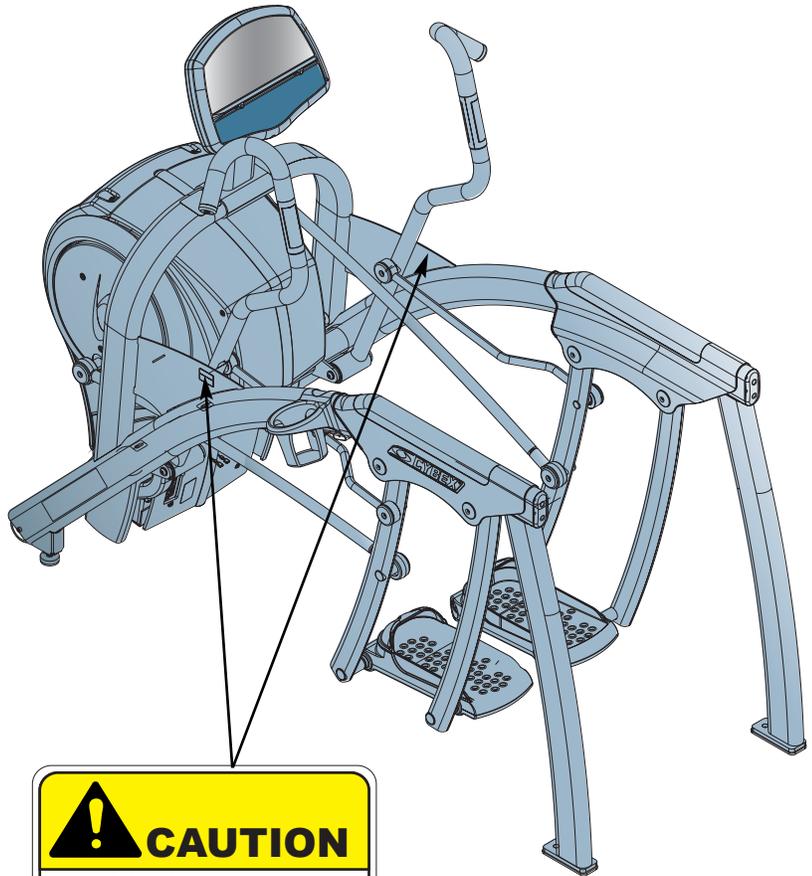
**! WARNING**

Hot flywheel! Wait until it cools before servicing.

DE-17155-4

**Caution Decals**

Caution decals indicate a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. The caution decals are shown below.



Caution decal part number  
DE-17219-4

**NOTE:** This decal is located on both sides of the unit in a total of two locations.

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## 2 - Preventive Maintenance

### Warnings

All warnings and cautions listed in this chapter are as follows:

***! WARNING: All maintenance activities shall be performed by qualified personnel. Failure to do so could result in serious injury.***

***! WARNING: To prevent electrical shock, be sure that the power is shut off and the unit is unplugged from the electrical outlet before performing any cleaning or maintenance procedures.***

***! WARNING: Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged. Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.***

***! WARNING: Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.***

***! WARNING: The flywheel may be hot. Wait until it cools before servicing.***

### Regular Maintenance Activities

***! WARNING: All maintenance activities shall be performed by qualified personnel. Failure to do so could result in serious injury.***

Preventive maintenance activities must be performed to maintain normal operation of your unit. Keeping a log of all maintenance actions will assist you in staying current with all preventive maintenance activities. See Service Schedule located at the end of this chapter.

***NOTE: Worn or damaged components shall be replaced immediately or the unit removed from service until the repair is made.***

***NOTE: Cybex is not responsible for performing regular inspection and maintenance actions for your unit. Instruct all personnel in equipment inspection and maintenance actions and also in accident reporting/recording.***

## Cleaning Your Arc Trainer 610A

***! WARNING: To prevent electrical shock, be sure that power is shut off and the unit is unplugged from the electrical outlet before performing any cleaning or maintenance procedures.***

When cleaning your unit spray a mild cleaning agent, such as a water and dish soap solution, on a clean cloth first and then wipe the unit with the damp cloth.

***NOTE: Do not spray cleaning solution directly on the unit. Direct spraying could cause damage to the electronics and may void the warranty.***

**After Each Use** - Wipe up any liquid spills immediately. After each workout, use a cloth to wipe up any remaining perspiration from the handrails and painted surfaces.

Be careful not to spill or get excessive moisture on the console and display overlays, as this might create an electrical hazard or cause failure of the electronics.

**As Needed** - Vacuum any dust or dirt that might accumulate under or around the unit. Cleaning this area should be done as often as indicated in the *Service Schedule*.

***! WARNING: Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged. Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.***

To clean inside the unit, remove the four Phillips head screws securing the access cover in place. Use a vacuum attachment or hand vacuum to clean the exposed elevation assembly and remove dirt and debris off of internal components.

Use a *dry* cloth to wipe all exposed areas. Replace the access cover and secure it with the screws when finished.

Lift the rear of the unit and roll it back from its present position so as to vacuum the floor area underneath the unit. When finished, return the unit to its normal position.

**Contact Heart Rate Grips** - Contaminants, such as hand lotions, oils or body powder, may come off on the contact heart rate grips. These can reduce sensitivity and interfere with the heart rate signal. It is recommended that the user have clean hands when using the contact heart rate. Clean the grips using a cloth dampened with a cleaning solution containing alcohol. The grips are the only part of the unit you should use a cleaning solution containing alcohol.

## Drive Belt Maintenance

There are two drive belts that may become loose, worn or cracked. See Figure 1.

**Primary Belt** - This is the wider of the two belts. It has grooves that keep it aligned on the large upper pulley. Unless the unit has been serviced and not put back together properly, it is *unlikely* that the primary belt will need to be re-tensioned.

**Secondary Belt** - This is the narrower of the two belts. It has grooves that keep it aligned on the flywheel's drive pulley. It is *unlikely* that the secondary belt will become loose because it is a stretch-fit belt. Unless the unit has been worked on and not put back together properly, it is *unlikely* the tension will change.

Follow this *Drive Belt Maintenance* procedure to ensure that the belts are tensioned properly and in good condition. See the *Service Schedule* in this chapter for a minimum schedule for checking the belt tension and condition. **NOTE:** *If a belt has cracks or appears worn, it must be replaced immediately by a qualified service technician.*

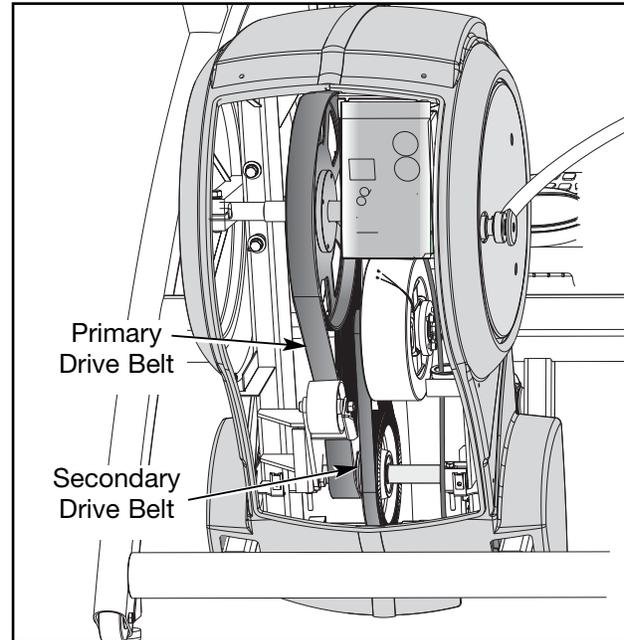


Figure 1

### Tools Required

- Phillips head screwdriver

**! WARNING:** *Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.*

1. Read and understand this *Drive Belt Maintenance* section thoroughly before proceeding to step 2.
2. Disconnect the external power source.
  - A. Turn the main power switch above the power inlet to the off (O) position.
  - B. Unplug the power cord from the power outlet.

**3. Remove the access cover.**

- A. Using a Phillips head screwdriver, remove the four screws securing the access cover in place. See Figure 2.
- B. Remove the access cover.

***! WARNING: The flywheel may be hot. Wait until it cools before servicing.***

**4. Check the condition of each belt.**

- A. Roll each belt by pulling down on it. Examine the condition of each belt. If a belt has cracks or appears worn, it must be replaced immediately by a qualified service technician.

**5. Check the tension of the primary belt.**

- A. Press on the primary belt with your hand. You should not feel any “give” in the primary belt. If the belt “gives”, it must be adjusted immediately by a qualified service technician.

**6. Check the tension of the secondary belt.**

- A. Press on the secondary belt with your hand. The belt should “give” about 1/4” (0.6 cm). If the belt “gives”, it must be adjusted immediately a qualified service technician.
- B. Locate the spacers under the lower pivot shaft. Visually check that the spacers are in place and in good condition. If the spacers are visibly cracked or missing, it must be replaced immediately by a qualified service technician. See Figure 3.

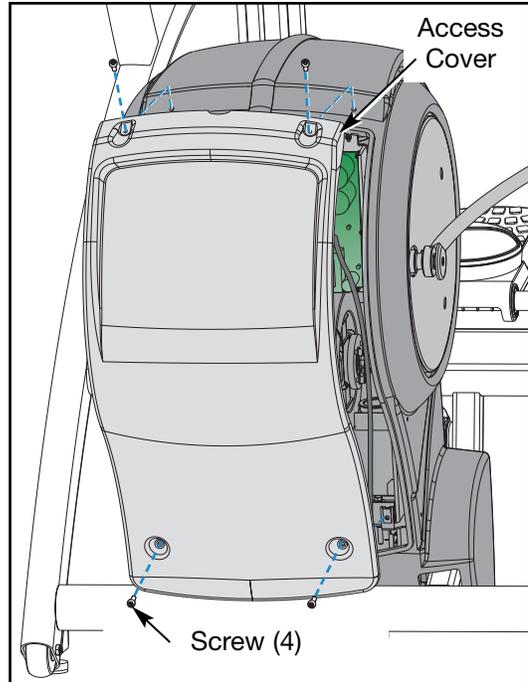


Figure 2

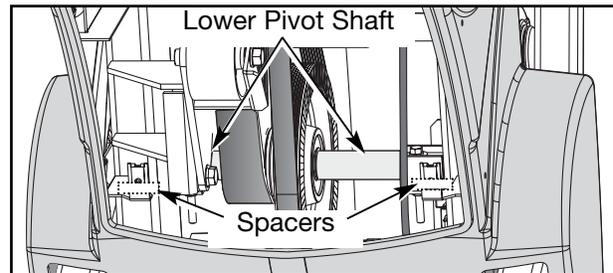


Figure 3

## **Lubrication**

The Arc Trainer 610A is designed with no-maintenance parts. Although there are grease fittings on the pillow blocks, re-lubrication of the bearings is not required.

**Elevation Motor Lubrication** - In time the elevation motor pivot points may develop a squeak. If a squeak is present, the unit will need to be serviced by a qualified service technician.

## **Environment**

**Static Electricity** - Depending upon where you live, you may experience dry air, causing a common experience of static electricity. This may be especially true in the winter time. You may notice a static build-up just by walking across a carpet and then touching a metal object. The same can hold true while working out on your unit. You may experience a shock due to the build-up of static electricity on your body and the discharge path of the unit. If you experience this type of situation, you may want to increase the humidity to a comfortable level through the use of a humidifier.

**Humidity** - The unit is designed to function normally in an environment with a relative humidity range of 30% to 75%.

**NOTE:** *Do not install or use the unit in an area of high humidity, such as in the vicinity of a steam room, sauna, indoor pool or outdoors. Exposure to extensive water vapor, chlorine and/or bromine could adversely affect the electronics as well as other parts of the machine.*

**Temperature** - The unit is designed to function normally in an environment with an ambient temperature range of 50° F (10° C) to 104° F (40° C) degrees.

## **Storage**

**Humidity** - The unit can be shipped and stored in an environment with a relative humidity range of 10% to 90%.

**NOTE:** *Do not store the unit in an area of high humidity, such as in the vicinity of a steam room, sauna, indoor pool or outdoors. Exposure to extensive water vapor, chlorine and/or bromine could adversely affect the electronics as well as other parts of the machine.*

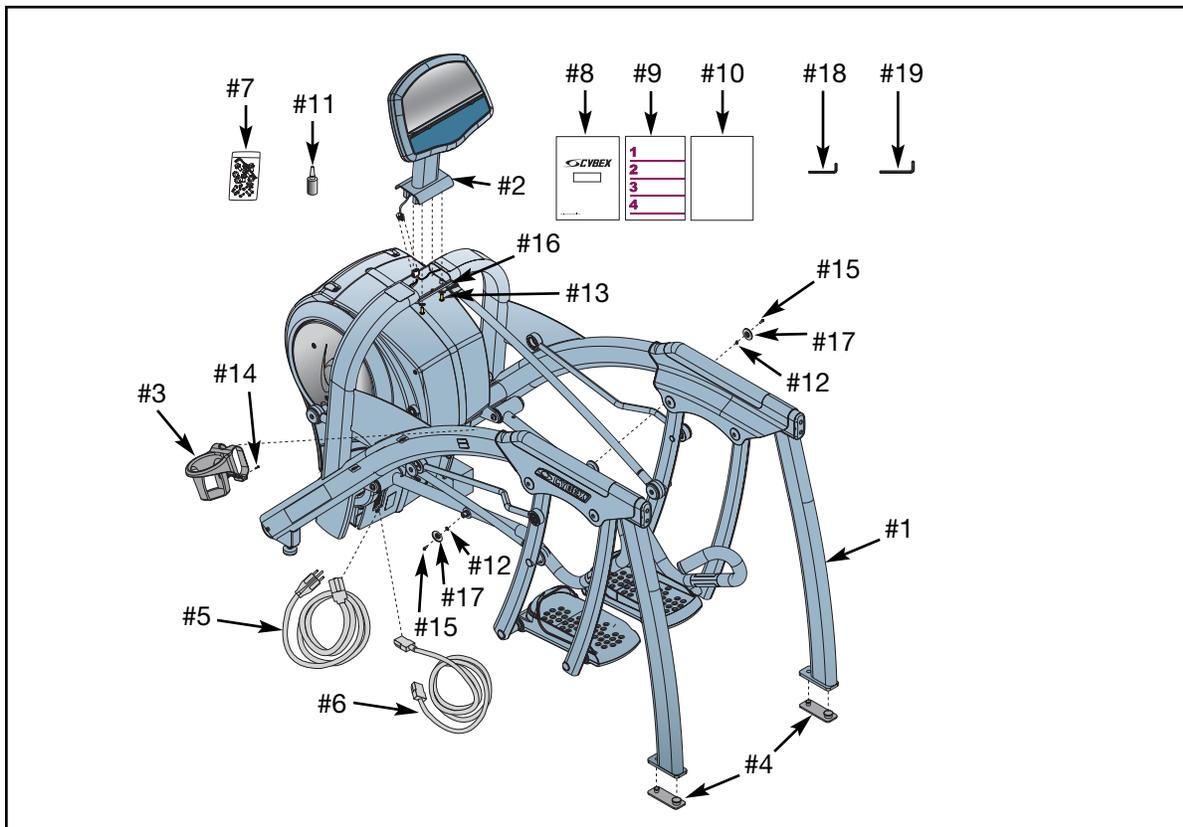
**Temperature** - The unit can be shipped and stored in an environment with an ambient temperature range of 32° F (0° C) and 140° F (60° C) degrees.



**Parts List - Arc Trainer 610A**

Item	Qty	Part Number	Description
<input type="checkbox"/>	1	Varies	Base with covers attached
<input type="checkbox"/>	1	Varies	Console assembly (in box)
<input type="checkbox"/>	1	PL-17209	Water bottle holder (in box)
<input type="checkbox"/>	4	11090-405	Foot pad (in box)
<input type="checkbox"/>	1	EW600000	Power cord IEC320 (in box)
<input type="checkbox"/>	1	EW600006	Power Supply Cord Daisy Chain
<input type="checkbox"/>	1	NA	Hardware pack (in box)
<input type="checkbox"/>	1	5610A-4	Owner's Manual (in box)
<input type="checkbox"/>	1	610A-352	Assembly poster
<input type="checkbox"/>	1	600A-301	Warranty sheet
<input type="checkbox"/>	1	YA00022	Threadlocker
<input type="checkbox"/>	2	600A-311	Flange Spacer
<input type="checkbox"/>	4	HC700415	BHSCS .375-16 x .75
<input type="checkbox"/>	2	HT552515	Pan HD Phil HD Self Tapping 8-16 x .75 Type WB Black
<input type="checkbox"/>	2	HX620415	BHSCS .250-20 x .75
<input type="checkbox"/>	4	JS347400	Internal Tooth Lockwasher
<input type="checkbox"/>	2	PL-16535	Linkage Rod Cap
<input type="checkbox"/>	1	BK030205	5/32" Allen wrench
<input type="checkbox"/>	1	BK030204	7/32" Allen wrench

NA means Not Applicable



## 4 - Service

### Warnings/Cautions

All warnings and cautions listed in this chapter are as follows:

- ! WARNING:** *All maintenance activities shall be performed by qualified personnel. Failure to do so could result in serious injury.*
- ! WARNING:** *Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.*
- ! WARNING:** *Flywheel may be hot. Wait until it cools before servicing.*
- ! CAUTION:** *Do not pinch your fingers between the belt and pulley during this procedure.*
- ! WARNING:** *Failure to release the drive belt tension may cause personal injury and may damage the unit.*
- ! WARNING:** *Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.*
- ! CAUTION:** *Pulley on eddy current brake is sharp. Wear work gloves to protect your hands.*

**! WARNING: All maintenance activities shall be performed by qualified personnel. Failure to do so could result in serious injury.**

For any service related concerns, call Cybox Customer Service at **800-766-3211** (for Cybox customers living within the USA). For customers living outside the USA, call **508-533-4300** or fax **508-533-5183**.

**NOTE:** Read and understand each procedure thoroughly before servicing. Unless otherwise noted “right” and “left” denote user orientation for all procedures.

**! CAUTION**

**Use only Cybox replacement parts when servicing. Failure to do so could result in personal injury.**

**Test Mode**

To enter **Test Mode** press and hold down the **Pause/end** key on the display while turning the power switch to the on (I) position. When all keys are released “ARC” and the software revision “x.xx” are shown on the display. To exit **Test Mode** press **Pause/end**.

**Cybox will void warranty if non-Cybox replacement parts are used.**

**Stuck Key List**

If **Test Mode** occurs without holding any keys, a key may be stuck closed or Error 7 may have occurred. You may need to replace the upper and/or lower display overlay. See Figure 1. If “KEY#” is displayed you can determine which key is stuck closed by referring to the number list below.

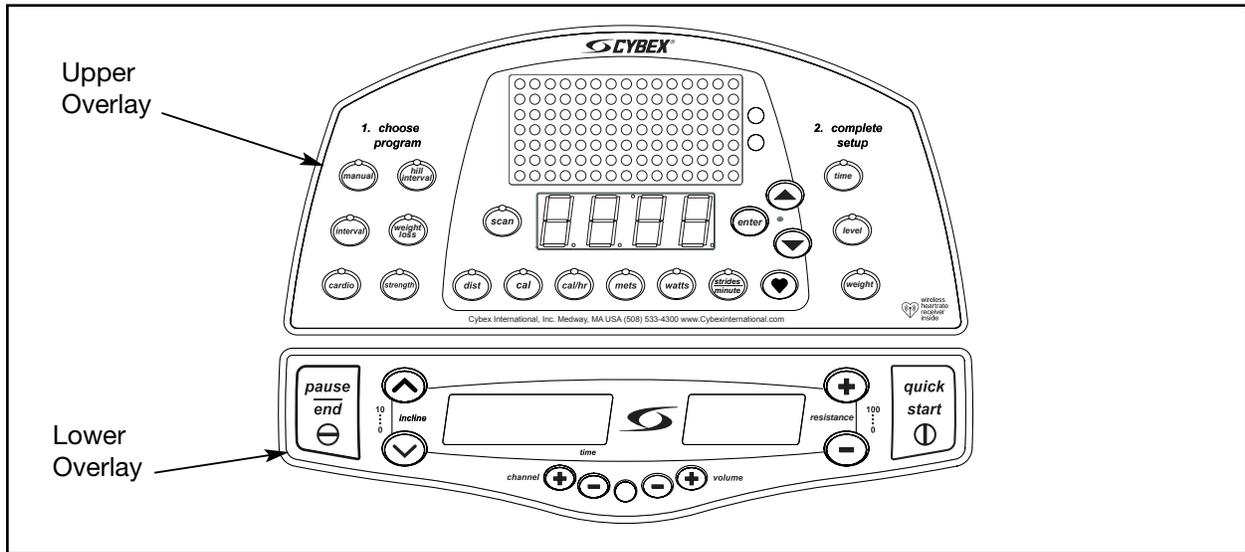


Figure 1

- |              |                    |                  |                   |
|--------------|--------------------|------------------|-------------------|
| 1 Mets       | 9 Incline Down     | 17 Incline Up    | 25 Pause/End      |
| 2 Auxiliary  | 10 Resistance Down | 18 Resistance Up | 26 Quick Start    |
| 3 Channel Up | 11 Channel Down    | 19 Volume Down   | 27 Volume Up      |
| 4 Scan       | 12 Strength        | 20 Center Up     | 28 Hill Interval  |
| 5 Watts      | 13 Cal/Hr          | 21 Cal           | 29 Dist           |
| 6 Cardio     | 14 Interval        | 22 Weight Loss   | 30 Manual         |
| 7 Level      | 15 Time            | 23 Weight        | 32 Strides/Minute |
| 8 Enter      | 16 Center Down     | 24 Heart         |                   |

## LED Functions

LEDs are used to indicate the status of many of the unit inputs. After entering *Test Mode* refer to the following list to check that these LEDs are functioning properly:

**Heart LED** - Blinks on blue with every signal from the contact heart rate receiver and red for wireless signals (Polar).

**Weight LED** - Blinks on when CSAFE data is being received.

**Level LED** - Blinks on when CSAFE data is being transmitted.

**Lower Left Window** - The numbers indicate actual elevation. The decimal point before the numbers shows the activation of the level 3 position switch in the elevation motor (on above level 3). If dashes are shown in the display, the unit is either above or below the level 3 position switch, requiring it to be manually run through the switch to begin indicating actual elevation.

**Lower Right Window** - The numbers indicate resistance (0-100). The right most decimal point indicates the pulses from the speed sensor.

## Key Functions

While in *Test Mode* press the following keys for desired information:

**Hill Interval key** - Lights all of the LEDs for a short period of time.

**Weight Loss key** - Lights only the columns.

**Strength key** - Lights only the rows.

**Incline ↑** - Run elevation motor up.

**Incline ↓** - Run elevation motor down.

**Resistance + (plus)** - Run resistance up.

**Resistance - (minus)** - Run resistance down.

**Distance** - Press *once* for odometer information (DST) to appear in the speed window.

Press *again* for hour meter information (HRS) to appear in the speed window.

Press *three* times for number of starts information (USES) to appear in the speed window.

Press *four* times for number of positions the elevation (ELV) has ever moved. Example: if a user runs the elevation from 2 to 3, 1 position is added to this number.

**Strides Per Minute** - Displays and cycles through error log. Up to 10 errors can be stored.

**Scan** - Clears error log when pressed twice while in error log mode.

**Mets** - Displays the torque in ft-lbs, (relative to LOAD).

**Calories** - Displays brake pulse width (PWM) value (the value of brake load in A/D counts). The number range is relative to brake current and goes from 0-200.

**Enter** - Required to save setup values.

## Error Codes

Error codes notify you of a problem condition and are displayed on the center of the console. These codes can also help to indicate the part of the unit most likely to be causing the problem. Errors that present a hazard to the user provide a measure of safety by causing a one second beep, stopping the unit and locking out operation of the unit.

A log of errors can be viewed and cleared. Up to 10 errors can be stored.

**To enter *Test Mode*:** Press and hold down any key on the display while turning the power switch to the on (I) position.

**To view the Error Log:** Press the **Strides Per Minute** key to display and cycle through error log; Press again to cycle to the next stored error.

**To clear the Error Log:** Press the **Scan** key twice.

**To exit *Test Mode*:** Press the **Stop** key.

**NOTE:** A processor upset can cause a bAd#. See F then G.

<b>Error</b>	<b>Description</b>
bAd0	Bad check sum. See F then E.
bAd2	Internal RAM error. See F then E.
bAd3	Watchdog timeout. See F then E.
Err3	Speed sense lost. See A and B.
Err5	No index switch sense within timed limits. This is declared when the timed elevation reaches 0% without tripping the index. See D and A.
Err7	EEPROM error (memory lost, loads new defaults, enters <i>Test Mode</i> ). See E.
ErrE	Index switch always on (or switch disconnected or wired backwards). This means that timed elevation has gone up 3 positions and the index is still sensed. See D.

### Action

A	Check the lower board
B	Check the brake
C	Check the speed sensor and speed sensor disc
D	Check the elevation motor
E	Replace the display board if problem persists
F	Turn the power switch to the off (O) position and back on (I)

## Speed Sensor Adjustment

### Tools Required

- Phillips head screwdriver

**! WARNING: Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.**

- 1. Disconnect the external power source.**
  - A. Turn the main power switch above the power inlet to the off (O) position.
  - B. Unplug the power cord from the power outlet.
- 2. Remove the access cover.**
  - A. Using a Phillips head screwdriver, remove the four screws securing the access cover. See Figure 2.
  - B. Remove the access cover.
- 3. Visually inspect the target disk on the lower pulley.**
  - A. Turn the lower pulley slowly and look for dirt, scratches or other damage on the target disk. See Figure 3. **NOTE:** If the target disk or speed sensor is dusty use a soft dry cloth to wipe off the dust. A dirty, scratched or damaged disk may cause Error 3 to occur.
- 4. Measure the speed sensor gap.**
  - A. Measure the gap between the speed sensor and the lower pulley. It should measure 3/16" (.48 cm) and should be parallel to the lower pulley. See Figure 3.

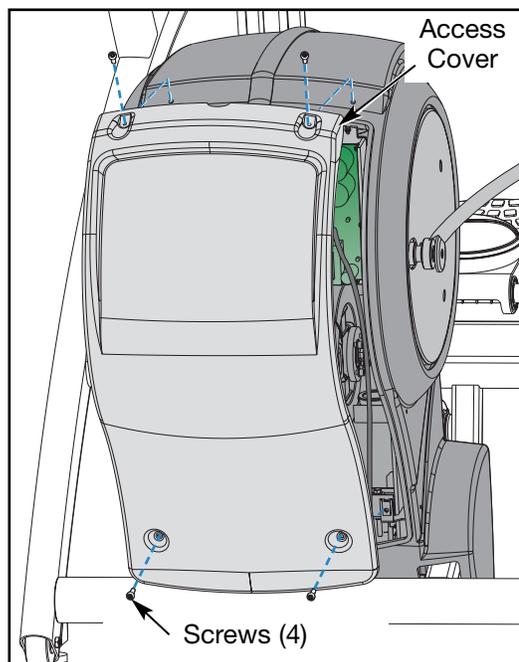


Figure 2

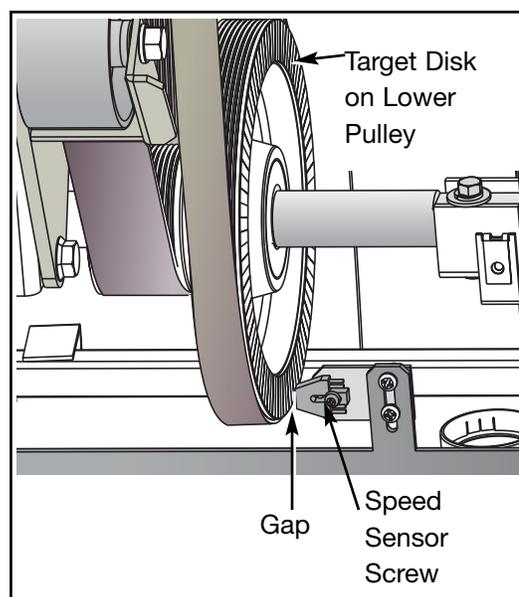


Figure 3

**5. Adjust the speed sensor gap (if needed).**

- A. Using a Phillips head screwdriver, loosen the screw securing the speed sensor in place. See Figure 3. **NOTE:** *Gently bend the side cover to get at the speed sensor screw.*
- B. Adjust the gap between the speed sensor and the lower pulley to 3/16" (.48 cm) and tighten the screw. See Figure 3.

**6. Test for speed errors.**

- A. Connect the power cord to a power outlet.
- B. Enter *Test Mode*.

***! WARNING: Flywheel may be hot. Wait until it cools before servicing.***

***! CAUTION: Do not pinch your fingers between the belt and pulley during this procedure.***

- C. Slowly move the flywheel with your hand and check the speed LED on the lower board. It should blink as the target disk passes the sensor.
- D. Mount the unit and begin striding at a steady pace.
- E. While striding, take note of the speed that is displayed in the strides-per-minute display. This number should increase as you stride faster. If the number fluctuates greatly then your speed sensor gap may need to be readjusted or replaced.
- F. Press **Stop** and turn the power switch to the off (O) position.

**7. Attach the access cover.**

- A. While being sure not to pinch any cables, hold the access cover in place. See Figure 2.
- B. Using a Phillips head screwdriver, tighten the four screws securing the access cover.

## Drive Belts

**NOTE:** This procedure will cover the primary and secondary drive belts.

### Tools Required

- Phillips head screwdriver
- 3/16" Allen wrench
- 2 Cloths
- 3/8" Nutdriver or socket wrench
- 7/16" Socket wrench
- 1/2" Socket wrench (only if belt tension needs to be reset)
- 1/2" Open end wrench (only if belt tension needs to be reset)
- 3/8" Square-hole torque wrench (only if belt tension needs to be reset)

**! WARNING: Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.**

### 1. Elevate the unit and disconnect the power source.

- A. Plug the power cord into the power outlet.
- B. Enter *Test Mode*.
- C. Elevate the unit to a minimum of level 7 incline.
- D. While the unit is elevated, turn the main power switch to the off (O) position and unplug the power cord from the power outlet.

### 2. Remove the access cover.

- A. Using a Phillips head screwdriver, remove the four screws securing the access cover. See Figure 2.
- B. Remove the access cover.

**! WARNING: Flywheel may be hot. Wait until it cools before servicing.**

### 3. Detach the connecting rods.

- A. Using a 3/16" Allen wrench, remove the Cap, SHCS and spacer securing the linkage rod. See Figure 4.  
**NOTE:** Detach only the ends where the rods connect to the crank.
- B. Lay the linkage rod down on the frame.  
**NOTE:** Place a cloth in between the linkage rod and the frame to prevent scratches.

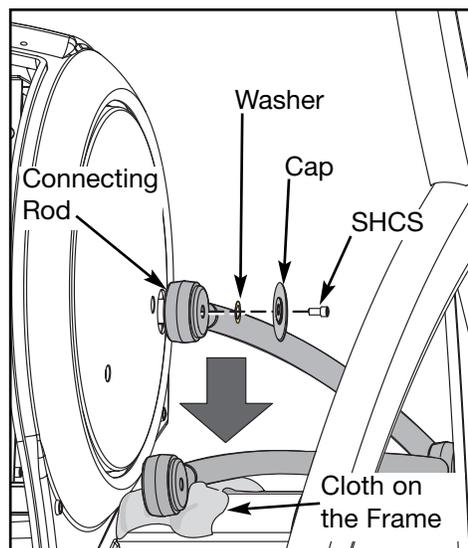


Figure 4

4. Remove the side covers.

- A. Remove the six screws and six washers securing each side cover in place. See Figure 5.
- B. Remove both side covers. **NOTE:** The gasket will come off with one of the side covers. See Figure 5.

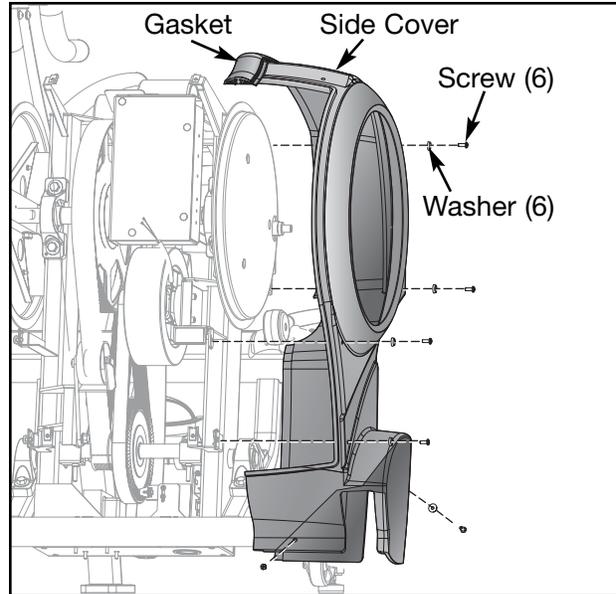


Figure 5

5. Remove the crank covers.

- A. Using a Phillips head screwdriver, remove the three screws securing each crank cover in place. See Figure 6.
- B. Remove both crank covers.

**! WARNING: Failure to release the drive belt tension may cause personal injury and may damage the unit.**

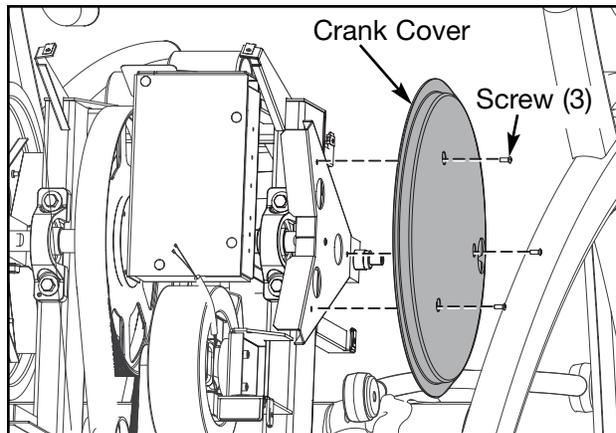


Figure 6

6. Remove the lower pivot assembly.

- A. Using a 7/16" socket wrench, remove the two screws, two lock washers and two flat washers from the lower pivot shaft. See Figure 7. **NOTE:** The tension is now released. The primary belt can be replaced without loosening the idler pulley.

**NOTE:** If you are not replacing the secondary belt, leave the lower pivot assembly loose in its place, skip steps 6B-8E and continue with step 9.

- B. Remove the lower pivot assembly out of the secondary belt and from the frame. See Figure 8.

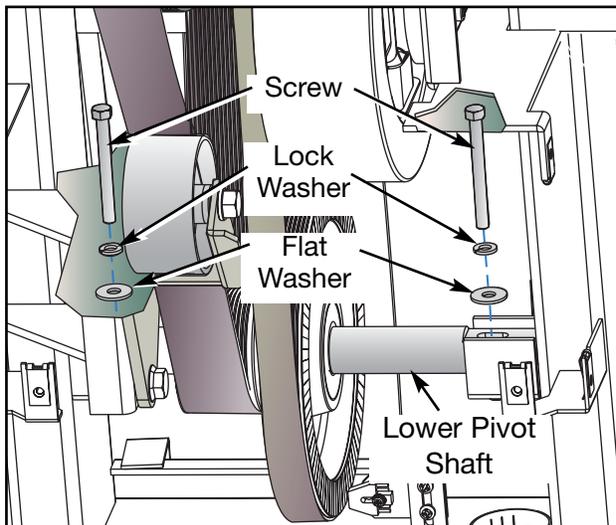


Figure 7

7. Remove the secondary belt (if applicable).

- A. Slide the secondary drive belt off the unit and discard it.

**NOTE:** If you are not replacing the primary belt skip to step 14.

**! WARNING:** Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.

**8. Remove the lower board assembly (if applicable).**

**A.** Pull out on the lower board shield. See Figure 9.  
**NOTE:** It will snap out.

**B.** Disconnect the elevation motor cable from the lower board. See Figure 10.

**C.** Using a 3/8" nutdriver, remove the nut, washer and ground wire from the stud above the lower board. See Figure 10.

**D.** Using a Phillips head screwdriver, remove the top two screws from the lower board assembly and loosen the bottom two screws. See Figure 11.

**E.** Slide the lower board assembly to the left and off the two screws, then gently let it suspend by the cables.

**9. Remove the crank shaft assembly (if applicable).**

**A.** Using a 9/16" socket wrench and a 9/16" open end wrench, remove the two bolts, four flat washers and two nuts from each of the top pillow blocks. See Figure 12.

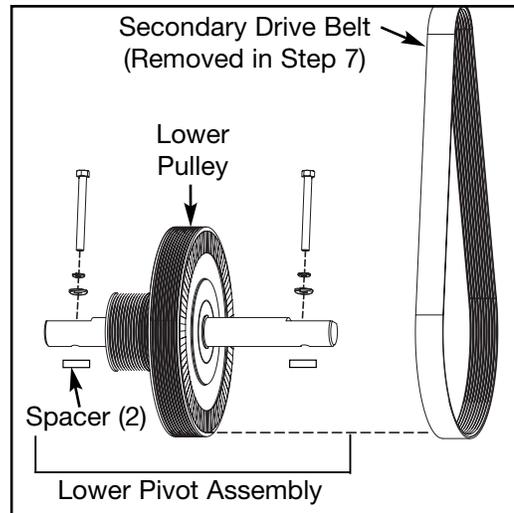


Figure 8

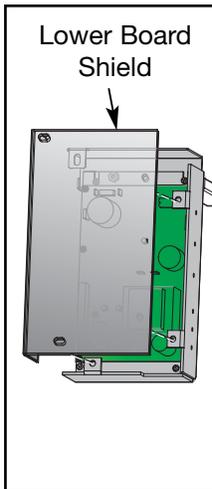


Figure 9

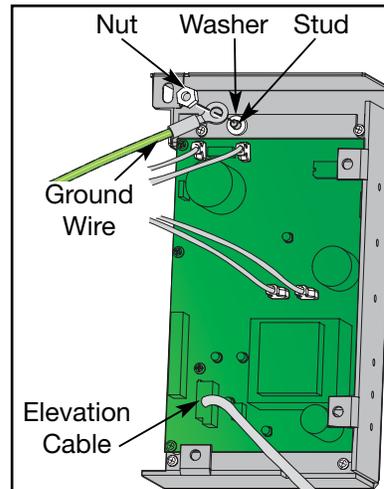


Figure 10

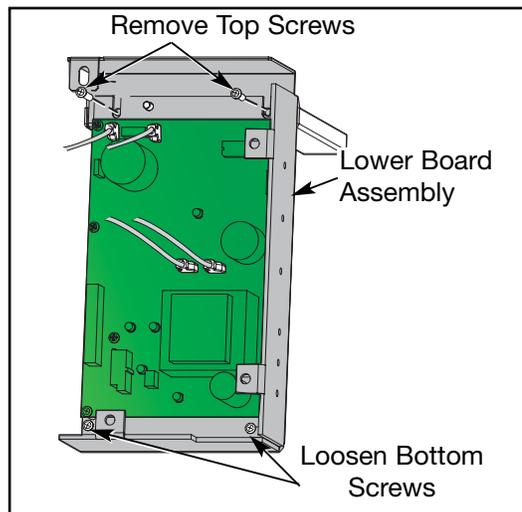


Figure 11

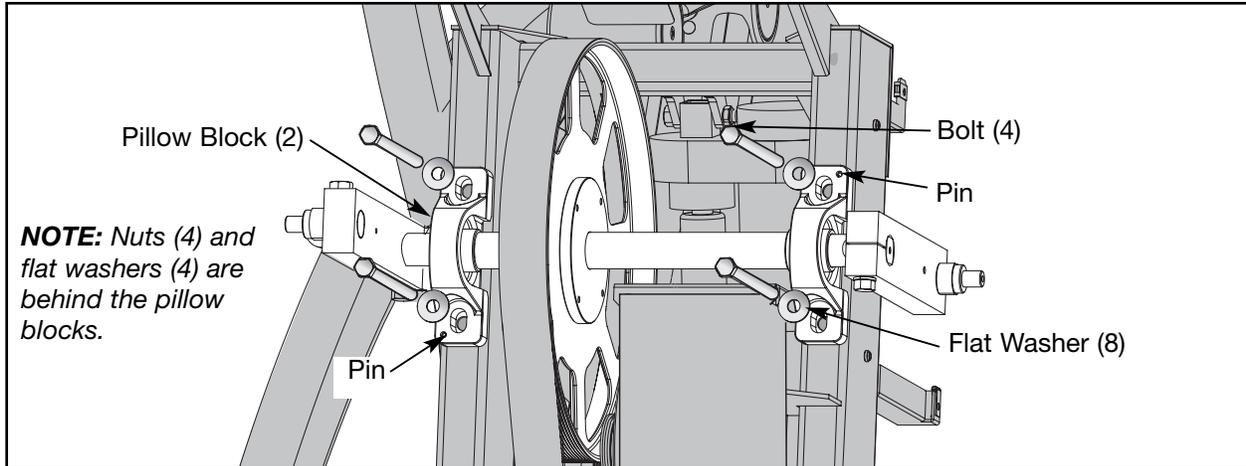


Figure 12

- B. Remove the crank shaft assembly along with the primary belt, pillow blocks and crank arms out of the unit. **NOTE:** You may need to wiggle the assembly out. There is a pin in each pillow block. Be sure not to lose them. See Figure 13.

**10. Remove the primary belt (if applicable).**

- A. Slide the primary drive belt off the upper pulley and discard it. See Figure 13.

**11. Attach the primary belt (if applicable).**

- A. Slide the new primary drive belt on the upper pulley. See Figure 13.
- B. Confirm that the primary drive belt is straight and centered on the upper pulley.

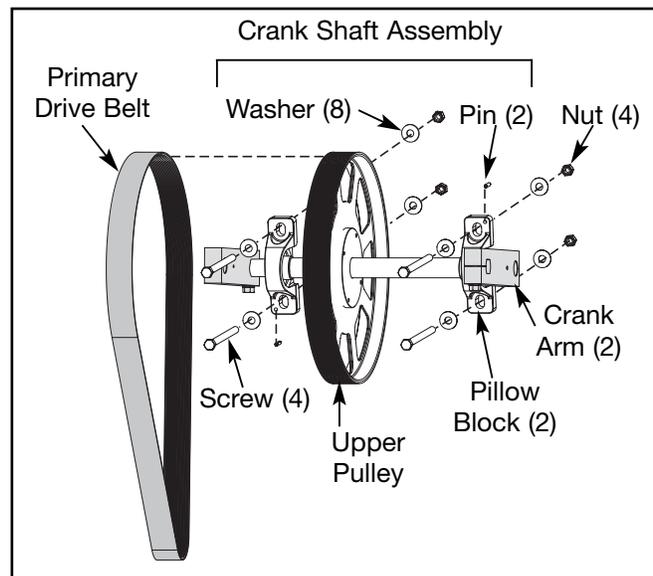


Figure 13

**12. Attach the crank shaft assembly (if applicable).**

- A. Confirm that a pin (removed in step 9B) protrudes about 1/4" out of the back of each pillow block. **NOTE:** The pins will slide into the frame in the next step. See Figures 12 and 13.
- B. Lift the assembly and slide the pins into the holes on the frame. **NOTE:** The pins should be flush with the front of the pillow blocks. You may need to tap them in.
- C. Using a 9/16" socket wrench and a 9/16" open end wrench, secure the two bolts, four flat washers and two nuts (removed in step 9A) to each pillow block. See Figure 12.

***! CAUTION: Do not pinch your fingers between the belt and pulley during this procedure.***

**13. Attach the lower board assembly.**

- A. Slide the lower board assembly over the two bottom screws and to the right.
- B. Using a Phillips head screwdriver, attach the top two screws and tighten the two bottom screws securing the lower board assembly in place.
- C. Place the washer on the stud then follow it with the ground wire terminal. Use a 3/8" nutdriver to secure the nut over the terminal. See Figure 10.
- D. Connect the elevation motor cable into the lower board.
- E. Place the shield into position and push in (the shield will snap in). See Figure 9.

**14. Position the secondary drive belt.**

- A. Slide the new secondary drive belt into place on the frame.

**15. Secure the lower pivot assembly.**

- A. Slide the lower pivot assembly through both drive belts and into place on the frame.
- B. Confirm that the secondary drive belt is straight and centered on the lower pulley. See Figure 12.
- C. Confirm that the two spacers are still in place under the lower pivot shaft.
- D. Using a 7/16" socket wrench, tighten the two screws, two lock washers and two flat washers securing the lower pivot assembly in place.

**16. Check the tension of the primary drive belt.**

- A. Press on the primary belt with your hand. You should not feel any "give" in the primary belt. If the belt "gives", follow step 17 through 18. Otherwise, skip to step 19. ***NOTE: The secondary belt is self-tensioning.***

**17. Release the tension of the primary drive belt.**

- A. Using a 1/2" socket wrench, loosen the bottom screw on the idler pulley. See Figure 14.
- B. Using a 1/2" socket wrench, loosen the top screw on the idler pulley See Figure 14.

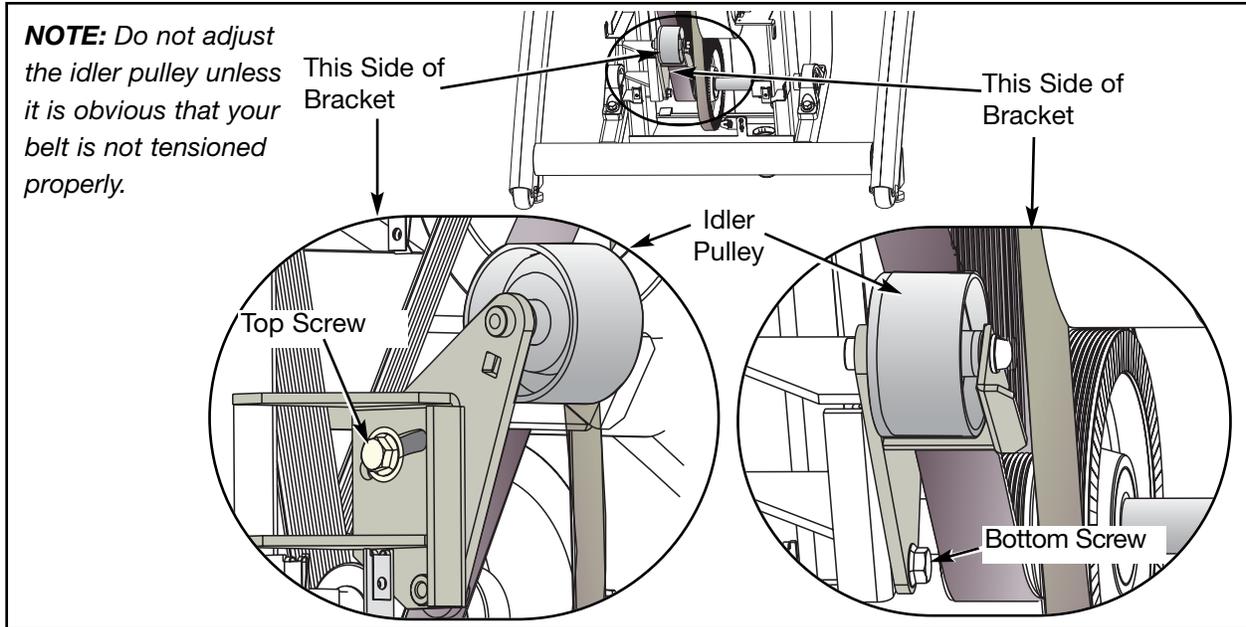


Figure 14

**18. Torque the primary belt (if applicable).**

- A. Using a 3/8" square-hole torque wrench, pull up until the idler wheel rocks against the brake and is torqued to 75 ft-lbs. **NOTE:** Continue holding the torque wrench at 75 ft-lbs during the next step.
- B. While holding the torque wrench at 75 ft-lbs, use a 1/2" socket wrench to tighten the top screw on the idler pulley. See Figure 14.
- C. Using a 1/2" socket wrench, tighten the bottom screw on the idler pulley. See Figure 14.

**19. Attach the crank covers.**

- A. Place each crank cover in position.
- B. Using a Phillips head screwdriver, attach the three screws securing each crank cover in place. See Figure 6.

**20. Attach the side covers.**

- A. Place each side cover in position in the rubber gasket.
- B. Using a Phillips head screwdriver, tighten the six screws and six washers securing each side cover. See Figure 5.

**21. Secure the connecting rods.**

- A. Using a 3/16" Allen wrench, attach the screw securing each connecting rod to each crank. See Figure 4.

**22. Attach the access cover.**

- A. While being sure not to pinch any cables, hold the access cover in place. See Figure 2.

- B. Using a Phillips head screwdriver, tighten the four screws securing the access cover.  
See Figure 2.

## **Eddy Current Brake**

### **Tools Required**

- Phillips head screwdriver
- 3/16" Allen wrench
- 7/16" Socket wrench
- Work Gloves

***! WARNING: Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.***

### **1. Elevate the unit and disconnect the power source.**

- A. Plug the power cord into the power outlet.
- B. Enter *Test Mode*.
- C. Elevate the unit to a minimum of level 7 incline.
- D. While the unit is elevated, turn the main power switch to the off (O) position and unplug the power cord from the power outlet.

### **2. Remove the access cover.**

- A. Using a Phillips head screwdriver, remove the four screws securing the access cover. See Figure 2.
- B. Remove the access cover.

***! WARNING: Flywheel may be hot. Wait until it cools before servicing.***

### **3. Detach the connecting rods.**

- A. Using a 3/16" Allen wrench, remove the screw securing each connecting rod to each crank. See Figure 4.
- B. Place a cloth on the frame where the connecting rod will rest.
- C. Rest the rod on the cloth to prevent scratches. See Figure 4.

### **4. Loosen the left side cover**

- A. Using a Phillips head screwdriver, remove the six screws and six washers securing each side cover in place. See Figure 5.
- B. Remove both side covers. ***NOTE: The gasket will come off with one of the side covers. See Figure 5.***

5. Remove the left crank cover.

- A. Using a Phillips head screwdriver, remove the three screws securing the left crank cover in place. See Figure 6.
- B. Remove the left crank cover.

**! WARNING: Failure to release the drive belt tension may cause personal injury and may damage the unit.**

6. Release the drive belt tension.

- A. Using a 7/16" socket wrench, loosen the two screws on the lower pivot shaft until the screws are raised 1/2" (1.25 cm) above the screws on the lower pivot shaft. See Figure 15. **NOTE: The drive belt tension is now released.**

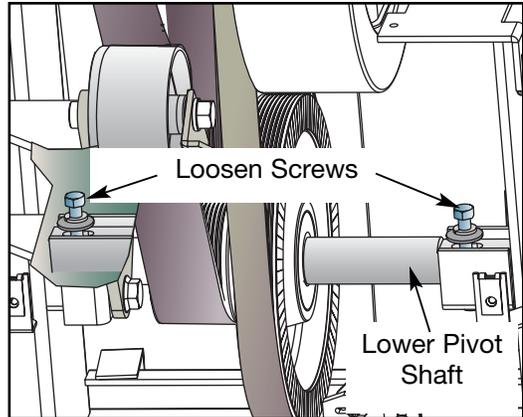


Figure 15

**! WARNING: Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.**

7. Disconnect the brake cables.

- A. Pull out on the lower board shield. See Figure 9. **NOTE: It will snap out.**
- B. Locate the two brake cables on the lower board that are labeled J1 and J2.
- C. Disconnect the two brake cables from the lower board.

**! CAUTION: Pulley on eddy current brake is sharp. Wear work gloves to protect your hands.**

8. Remove the eddy current brake.

- A. Wear work gloves whenever handling the eddy current brake. The pulley is sharp. See Figure 16.

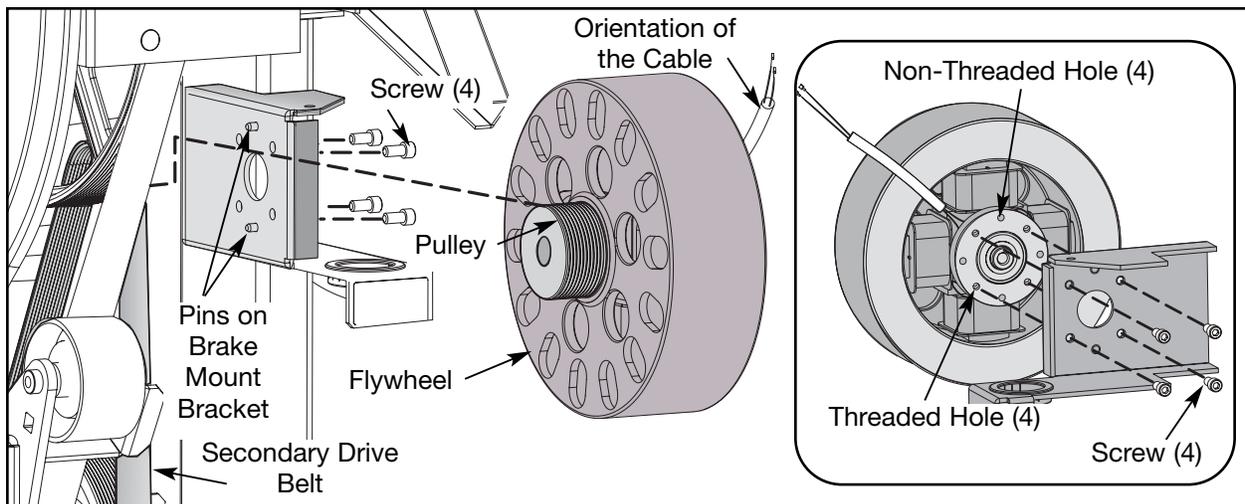


Figure 16

- B.** When the flywheel is cool, remove the secondary belt from the eddy current brake.
- C.** Using a 3/16" Allen wrench, first remove the two bottom screws securing the eddy current brake in place. See Figure 16.
- D.** Support the brake with your hand while removing the two top screws so that it does not fall.
- E.** Remove the eddy current brake from the unit. **NOTE:** *Cybex may want the old parts for evaluation. Call Cybex Customer Service to get an RMA number.*

**9. Attach the new eddy current brake.**

- A.** Locate the holes on the eddy current brake. Notice that there are four threaded holes and four non-threaded holes. See Figure 16.
- B.** Locate the two pins on the brake mount bracket. See Figure 16.
- C.** Orient the brake with the cable away from the unit. See Figure 16.
- D.** Slide the brake pulley into the secondary drive belt.
- E.** Place the two pins in any of the non-threaded holes on the bracket. **NOTE:** *Do not place the pins in threaded holes.*
- F.** Confirm that the brake is flat against the bracket and that the drive belt is straight on the pulley. **NOTE:** *Continue to support the brake during the next step.*
- G.** Using a 3/16" Allen wrench, first tighten the two top screws securing the eddy current brake. See Figure 16.
- H.** Tighten the two bottom screws securing the eddy current brake.

**10. Connect the brake cables.**

- A.** Locate the J1 and J2 fast-ons on the lower board.
- B.** Connect the brake cables to the lower board at J1 and J2. **NOTE:** *It does not matter which brake cable connects to J1 and J2.*
- C.** Place the lower board shield in position and snap it in.

**11. Tension the drive belt.**

- A.** Confirm that the secondary drive belt is straight and centered on the lower pulley. See Figure 12.
- B.** Confirm that the two spacers are still in place under the lower pivot shaft.
- C.** Using a 7/16" socket wrench, tighten the two screws on the lower pivot shaft.

***! CAUTION: Do not pinch your fingers between the belt and pulley during this procedure.***

D. Use your hand to slowly turn the flywheel and ensure that the belt is on straight.

**12. Attach the left crank cover.**

A. Place the crank cover in position.

B. Using a Phillips head screwdriver, attach the three screws removed in step 5A. See Figure 6.

**13. Secure the left side cover.**

A. Using a Phillips head screwdriver, attach the six screws and six washers removed in step 4A.

**14. Attach the left connecting rod.**

A. Place the left connecting rod in position.

B. Using a 3/16" Allen wrench, attach the screw removed in step 3A. See Figure 4.

**15. Attach the access cover.**

A. While being sure not to pinch any cables, place the access cover in position.

B. Using a Phillips head screwdriver, attach the four screws removed in step 2A. See Figure 2.

**16. Test the unit for proper operation.**

A. Connect the power cord into the power outlet.

B. Turn the main power switch above the power inlet to the on (I) position.

C. Operate the unit to verify proper operation.

***Elevation Motor***

**Tools Required**

- Phillips head screwdriver
- 3/16" Allen wrench
- 7/16" Socket wrench
- 3/8" Nutdriver or socket wrench
- 9/16" Open end wrench
- 9/16" Socket wrench

***! WARNING: Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.***

**1. Elevate the unit and disconnect the power source.**

- A. Plug the power cord into the power outlet.
- B. Enter *Test Mode*.
- C. Elevate the unit to a minimum of level 7 incline.
- D. While the unit is elevated, turn the main power switch to the off (O) position and unplug the power cord from the power outlet.

**2. Remove the access cover.**

- A. Using a Phillips head screwdriver, remove the four screws securing the access cover. See Figure 2.
- B. Remove the access cover.

***! WARNING: Flywheel may be hot. Wait until it cools before servicing.***

**3. Detach the connecting rods.**

- A. Using a 3/16" Allen wrench, remove the screw securing each connecting rod to each crank. See Figure 4. ***NOTE: Detach only the ends where the rods connect to the crank.***
- B. Place a cloth on the frame where each connecting rod will rest.
- C. Rest each rod on a cloth to prevent scratches. See Figure 4.

**4. Remove the side covers.**

- A. Using a Phillips head screwdriver, remove the six screws and six washers securing each side cover in place. See Figure 5.
- B. Remove both side covers. ***NOTE: The gasket will come off with one of the side covers.*** See Figure 5.

**5. Remove the center cover.**

- A. Using a Phillips head screwdriver, remove the two screws securing the center cover in place.
- B. Remove the center cover.

***! WARNING: Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.***

**6. Disconnect the elevation cable.**

- A. Pull out on the lower board shield. ***NOTE: It will snap out.***
- B. Disconnect the elevation cable from the lower board and slide it out of its slot on the frame.

7. Remove the elevation motor.

- A. Place your body next to the front end assembly to prevent it from pivoting and falling to the floor during the next step.
- B. Using a 9/16" open end wrench and a 9/16" socket wrench, remove the top bolt and nut securing the elevation motor in place. See Figure 17. **NOTE:** Do not lose the spacer between the bolt and nut.
- C. Pivot the front end assembly back and lean it against the frame (not the floor).
- D. Using a 9/16" open end wrench and a 9/16" socket wrench, remove the bottom bolt and nut securing the elevation motor in place. **NOTE:** Do not lose the spacer between the bolt and nut.
- E. Remove the elevation motor.  
**NOTE:** Cybex may want the old parts for evaluation. Call Cybex Customer Service to get an RMA number.

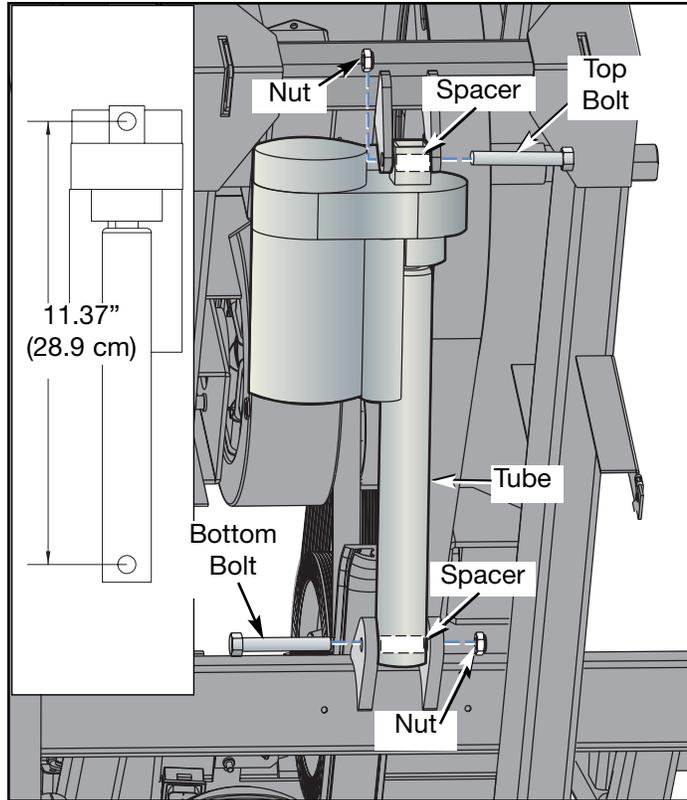


Figure 17

8. Calibrate the elevation motor.

- A. Connect the elevation motor to the lower board and temporarily connect the power. **NOTE:** The switch should automatically adjust to the level 3 position (starting level) before adjusting the tube nut.
- B. Turn the tube with your fingers until it measures 11.37" (28.9 cm) from the center of the top hole to the center of the bottom hole. See Figure 17.
- C. Turn the main power switch above the power inlet to the off (O) position and disconnect the power cord.
- D. Disconnect the elevation motor cable from the lower board and set the motor aside until step 10A.

9. Attach the elevation motor.

- A. Confirm that the two spacers (from step 7B and 7D) are in place.
- B. Pivot the front end assembly back into the position it was before step 7C.
- C. Place the new elevation motor in position and slide both bolts into the slots before tightening. See Figure 17. **NOTE:** The top bolt goes from the left to the right, but the bottom bolt can go either way.

**D.** Using a 9/16" open end wrench and a 9/16" socket wrench, tighten a nut on each bolt.

**10. Connect the elevation cable.**

**A.** Connect the elevation cable to the lower board and place it in the slot mentioned in step 6B.

**B.** Place the lower board shield in position and snap it in.

**11. Secure the center cover.**

**A.** Place the center cover in position.

**B.** Using a Phillips head screwdriver, attach the two screws removed in step 5A.

**12. Secure the side covers.**

**A.** Place the two side covers and the gasket in position.

**B.** Using a Phillips head screwdriver, attach each side cover with the six screws and six washers removed in step 4A. **NOTE:** You will have to elevate the unit to level 7 to attach the bottom two screws as discussed in step 1.

**13. Attach the connecting rods.**

**A.** Place each connecting rod in position.

**B.** Using a 3/16" Allen wrench, attach each connecting rod with a screw removed in step 3A. See Figure 4.

**14. Attach the access cover.**

**A.** While being sure not to pinch any cables, place the access cover in position.

**B.** Using a Phillips head screwdriver, attach the four screws removed in step 2A. See Figure 2.

**15. Test the unit for proper operation.**

**A.** Connect the power cord into the power outlet.

**B.** Turn the main power switch above the power inlet to the on (I) position.

**C.** Operate the unit at all levels to verify proper operation.

## Power Switch

### Tools Required

- Phillips head screwdriver

### 1. Disconnect the external power source.

- A. Turn the main power switch above the power inlet to the off (O) position.
- B. Unplug the power cord from the power outlet and from the power inlet.

### 2. Remove the access cover.

- A. Using a Phillips head screwdriver, remove the four screws securing the access cover. See Figure 2.
- B. Remove the access cover.

### 3. Remove the power switch assembly.

- A. Using a Phillips head screwdriver, remove the two screws on each side of the power switch. See Figure 18.
- B. Reach inside the unit and pull the power switch assembly up and out of the slot.
- C. Make note of which fast-ons are connected to the connectors.

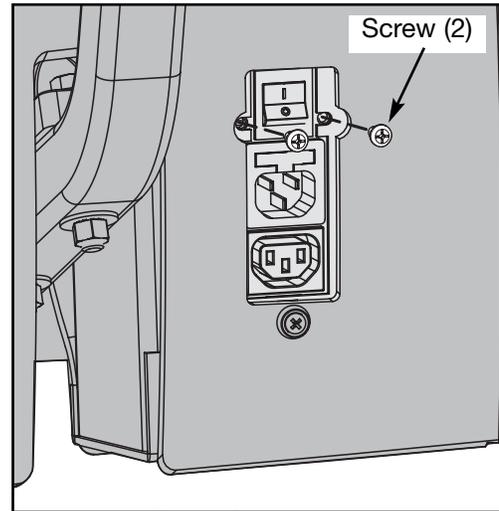


Figure 18

- D. Disconnect the three wires from the Filtered Power Input Module (middle one).
- E. Connect the three wires (removed from step 5D) to the new Filtered Power Input Module See Figure 4.
- F. Remove the three wires from power outlet module and remove this module from the old switch plate.
- G. Place the existing power outlet module into the new switch plate.
- H. Connect the wires as shown in Figure 4.
- I. With two pieces of tape, mark the top two wires to the on/off switch. **NOTE:** The purpose for marking the top two wires is so that you do not accidentally bypass the on/off switch when reconnecting the wires.
- J. Remove the four wires from the on/off switch and remove the switch from the old switch plate.
- K. Place the existing on/off switch into the new switch plate (positioned exactly as removed from the old switch plate).
- L. Connect the four wires as shown in Figure 4. Make sure the taped wires are connected to the same connectors from step 5I. Remove the tape from the two wires.

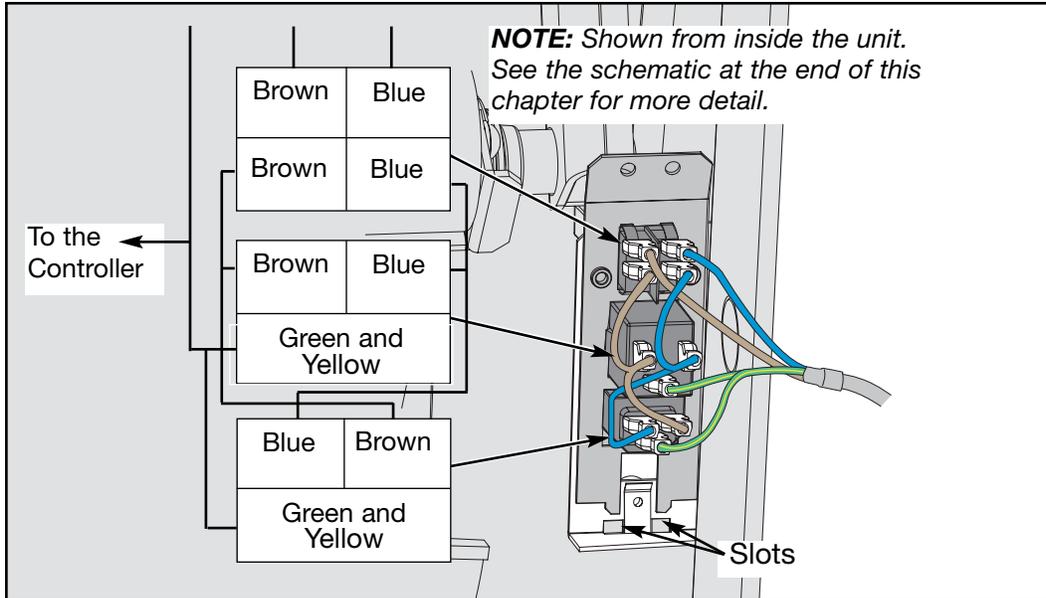


Figure 19

**M.** Verify the on/off switch is installed properly. See Figure 19.

**4. Attach the power switch assembly.**

**A.** Place the new power switch assembly into position. See Figure 18.

**B.** Using a Phillips head screwdriver, attach the two screws removed during step 3A into the power switch. See Figure 18.

**5. Attach the access cover.**

**A.** While being sure not to pinch any cables, place the access cover in position.

**B.** Using a Phillips head screwdriver, attach the four screws removed in step 3A.

**6. Test the unit for proper operation.**

**A.** Connect the power cord into the power inlet and the power outlet.

**B.** Turn the main power switch to the on (I) position.

**C.** Operate the unit at all levels to verify proper operation.

**D.** Turn main power switch off to verify it is wired properly.

## Upper Pillow Blocks

### Tools Required

- Phillips head screwdriver
- 3/16" Allen wrench
- 1/8" Allen wrench
- 7/16" Socket wrench
- 9/16" Socket wrench
- 9/16" Open end wrench
- 3/8" Nutdriver or socket wrench

***! WARNING: Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.***

#### 1. Elevate the unit and disconnect the power source.

- A. Plug the power cord into the power outlet.
- B. Enter *Test Mode*.
- C. Elevate the unit to a minimum of level 7 incline.
- D. While the unit is elevated, turn the main power switch to the off (O) position and unplug the power cord from the power outlet.

#### 2. Remove the access cover.

- A. Using a Phillips head screwdriver, remove the four screws securing the access cover. See Figure 2.
- B. Remove the access cover.

***! WARNING: Flywheel may be hot. Wait until it cools before servicing.***

#### 3. Detach the connecting rods.

- A. Using a 3/16" Allen wrench, remove the screw securing each connecting rod to each crank. See Figure 4.
- B. Place a cloth on the frame where each connecting rod will rest.
- C. Rest each rod on a cloth to prevent scratches. See Figure 4.

#### 4. Remove the side covers.

- A. Using a Phillips head screwdriver, remove the six screws and six washers securing each side cover in place. See Figure 5.
- B. Remove both side covers. ***NOTE: The gasket will come off with one of the side covers.*** See Figure 5.

5. Remove the crank covers.

- A. Using a Phillips head screwdriver, remove the three screws securing each crank cover in place. See Figure 6.
- B. Remove both crank covers.

**! WARNING: Failure to release the drive belt tension may cause personal injury and may damage the unit.**

6. Release the drive belt tension.

- A. Using a 7/16" socket wrench, loosen the two screws on the lower pivot shaft until the screws are raised 1/2" above the shaft. See Figure 15. **NOTE:** The drive belt tension is now released.

7. Remove the crank arm disk supports.

- A. Using a Phillips head screwdriver, remove the one screw securing each crank arm disk support in place. See Figure 20.

**! WARNING: Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.**

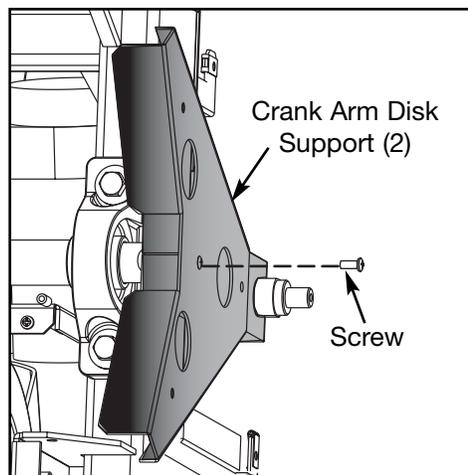


Figure 20

8. Remove the lower board assembly.

- A. Pull out on the lower board shield. **NOTE:** It will snap out.
- B. Disconnect the elevation cable from the lower board.
- C. Using a 3/8" nutdriver, remove the nut, washer and ground wire from the stud above the lower board.
- D. Using a Phillips head screwdriver, remove the top two screws from the lower board assembly and loosen the bottom two screws.
- E. Slide the lower board assembly left and off the two bottom screws then gently suspend it by the cables.

9. Remove the crank arms.

- A. Using a 7/16" socket wrench, loosen but do not remove the one screw on each crank arm. See Figure 21.
- B. Remove the crank arms.

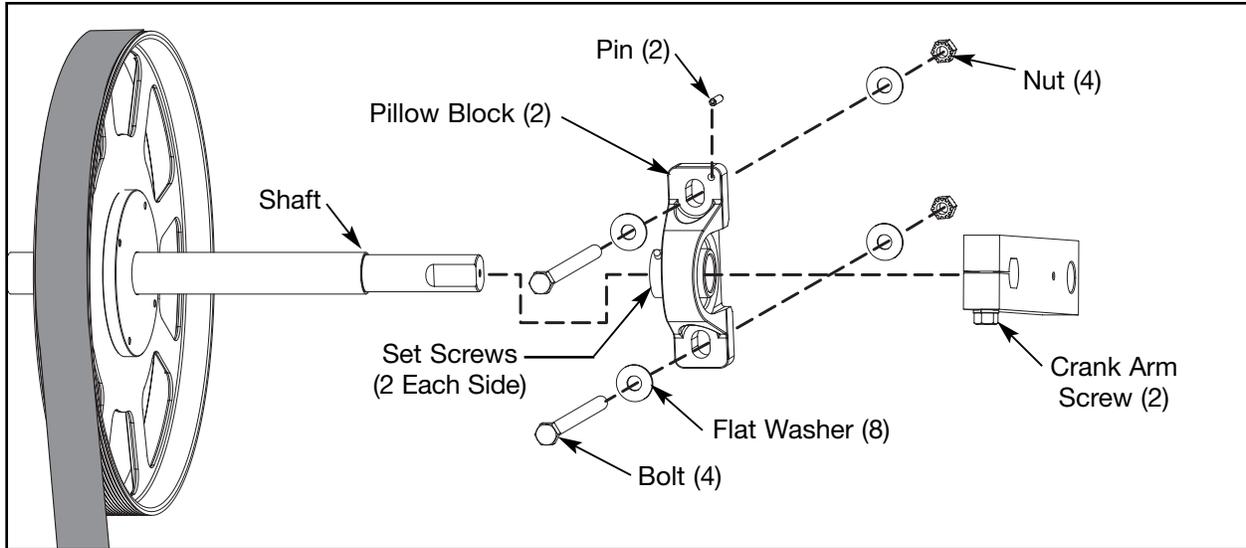


Figure 21

**10. Remove the crank shaft assembly.**

- A. Using a 9/16" socket wrench and a 9/16" open end wrench, remove the two bolts, four flat washers and two nuts from each of the top pillow blocks. See Figure 12.
- B. Remove the crank shaft assembly along with the primary belt and pillow blocks out of the unit. **NOTE:** There is a pin in each pillow block. See Figure 13.

**11. Remove the top pillow blocks.**

- A. Using a 1/8" Allen wrench, loosen but do not remove the two set screws on each pillow block. See Figure 21.
- B. Pull each pillow block off the shaft. See Figure 21.
- C. Discard the pillow blocks and pins (if applicable).

**12. Attach the new top pillow blocks.**

- A. Slide a pillow block on each end of the shaft. See Figure 21. **NOTE:** Orientation of pillow block sleeve and set screws must go toward the inside. Do not tighten the set screws until step 13F.

**13. Attach the crank shaft assembly.**

- A. Confirm that a pin protrudes about 1/4" out of the back of each pillow block and flush with the front. **NOTE:** The pins will slide into the frame in the next step.
- B. Place the assembly into the primary belt and slide the pins into the holes on the frame. **NOTE:** The pins should still be flush with the front of the pillow blocks. You may need to tap them in.
- C. Confirm that the belt is straight on the upper pulley.
- D. Using a 9/16" socket wrench and a 9/16" open end wrench, secure the two bolts, four flat washers and two nuts (removed in step 10A) to each pillow block. See Figure 12.

- E. Using a 1/8" Allen wrench, tighten the two set screws on each pillow block.

***! CAUTION: Do not pinch your fingers between the belt and pulley during this procedure.***

**14. Secure the crank arms.**

- A. Slide each crank arm in place. **NOTE:** *The face of each crank arm should be flush with the end of each shaft.*
- B. Using a 7/16" socket wrench, tighten the one screw on each crank arm.

**15. Attach the lower board assembly.**

- A. Place the lower board assembly over the two bottom screws and slide it to the right.
- B. Using a Phillips head screwdriver, attach the top two screws removed in step 8D and tighten the bottom two screws.
- C. Connect the elevation cable to the lower board and slide it into its slot on the frame.
- D. Place the washer (first) and the ground terminal (next) onto the stud and tighten with the nut removed during step 8C.
- E. Place the lower board shield in position and snap it in.

**16. Attach the crank arm disk supports.**

- A. Using a Phillips head screwdriver, attach each crank arm disk support with one screw removed during step 7A. See Figure 20.

**17. Tension the drive belt.**

- A. Using a 7/16" socket wrench, tighten the two screws on the lower pivot shaft. See Figure 15.

**18. Attach the crank covers.**

- A. Place each crank cover in position.
- B. Using a Phillips head screwdriver, attach each crank cover with three screws removed in step 5A. See Figure 6.

**19. Secure the side covers.**

- A. Place the two side covers and gaskets in position.
- B. Using a Phillips head screwdriver, attach each side cover with the six screws and six washers removed in step 4A.

**20. Attach the connecting rods.**

- A. Place each connecting rod in position.

- B. Using a 3/16" Allen wrench, attach each connecting rod with a screw removed in step 3A. See Figure 4.

**21. Attach the access cover.**

- A. While being sure not to pinch any cables, place the access cover in position.
- B. Using a Phillips head screwdriver, attach the four screws removed in step 2A. See Figure 2.

**22. Test the unit for proper operation.**

- A. Connect the power cord into the power outlet.
- B. Turn the main power switch above the power inlet to the on (I) position.
- C. Operate the unit at all levels to verify proper operation.

**Lower Pillow Blocks**

**Tools Required**

- Phillips head screwdriver
- 3/16" Allen wrench
- 1/8" Allen wrench
- 2.5" (6.3 cm) Wooden block
- 9/16" Socket wrench
- 9/16" Open end wrench

***! WARNING: Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.***

**1. Elevate the unit and disconnect the power source.**

- A. Plug the power cord into the power outlet.
- B. Enter *Test Mode*.
- C. Elevate the unit to a minimum of level 7 incline.
- D. While the unit is elevated, turn the main power switch to the off (O) position and unplug the power cord from the power outlet.

**2. Remove the access cover.**

- A. Using a Phillips head screwdriver, remove the four screws securing the access cover. See Figure 2.
- B. Remove the access cover.

***! WARNING: Flywheel may be hot. Wait until it cools before servicing.***

**3. Detach the connecting rods.**

- A. Using a 3/16" Allen wrench, remove the screw securing each connecting rod to each crank. See Figure 4.
- B. Place a cloth on the frame where each connecting rod will rest.
- C. Rest each rod on a cloth to prevent scratches. See Figure 4.

**4. Remove the side covers.**

- A. Using a Phillips head screwdriver, remove the six screws and six washers securing each side cover in place. See Figure 5.
- B. Remove both side covers. **NOTE:** The gasket will come off with one of the side covers. See Figure 5.

**5. Remove the lower pillow blocks.**

- A. Place a wooden block under the inner frame. See Figure 22.
- B. Using a 9/16" socket wrench and a 9/16" open end wrench, remove the two bolts, four flat washers and two nuts from each of the bottom pillow blocks. See Figure 22.
- C. Pull each pillow block and pin off the frame. See Figure 22. **NOTE:** You may need to tilt the pillow block up or pry it up off the frame. There is a pin in each pillow block.
- D. Discard the pillow blocks and pins (if applicable).

**6. Attach the new lower pillow blocks.**

- A. Confirm that a pin protrudes out of the back of each pillow block about 1/4" and flush with the front.
- B. Slide each pillow block on the shaft and each pin in its slot on the frame. **NOTE:** Orientation of pillow block sleeve and set screws must go toward the inside. When installed properly the pins should be flush with the front of the pillow blocks. You may need to tap them in.
- C. Using a 1/8" Allen wrench, tighten the two set screws on each pillow block.
- D. Remove the wooden block from under the inner frame. See Figure 22.

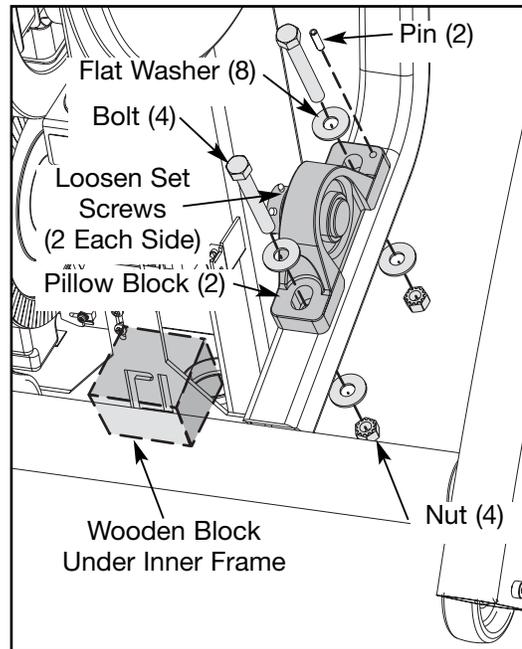


Figure 22

**7. Secure the side covers.**

- A. Place the two side covers and gasket in position.
- B. Using a Phillips head screwdriver, attach each side cover with the six screws and six washers removed in step 4A.

**8. Attach the connecting rods.**

- A. Place each connecting rod in position.
- B. Using a 3/16" Allen wrench, attach each connecting rod with a screw removed in step 3A. See Figure 4.

**9. Attach the access cover.**

- A. While being sure not to pinch any cables, place the access cover in position.
- B. Using a Phillips head screwdriver, attach the four screws removed in step 2A.

**Arm and Handle Link**

**NOTE:** *The arms and handle links are removed in the same way. This procedure can be used for both.*

**Tools Required**

- Phillips head screwdriver
- 3/16" Allen wrench
- 7/32" Allen wrench

**1. Disconnect the external power source.**

- A. Turn the main power switch above the power inlet to the off (O) position.
- B. Unplug the power cord from the power outlet.

**2. Disconnect the contact heart rate cable.**

- A. Unplug the contact heart rate cable from the main frame. See Figure 23.

**3. Remove the handle link.**

- A. Using a Phillips head screwdriver or 3/16" Allen wrench, remove each screw securing the (appropriate) cap. See Figure 24.
- B. Remove the caps.
- C. Slide the handle link off the foot plate arm shaft.
- D. Slide the handle link off the arm shaft. **NOTE:** *Arm will move freely. Hold in place until step 4.*

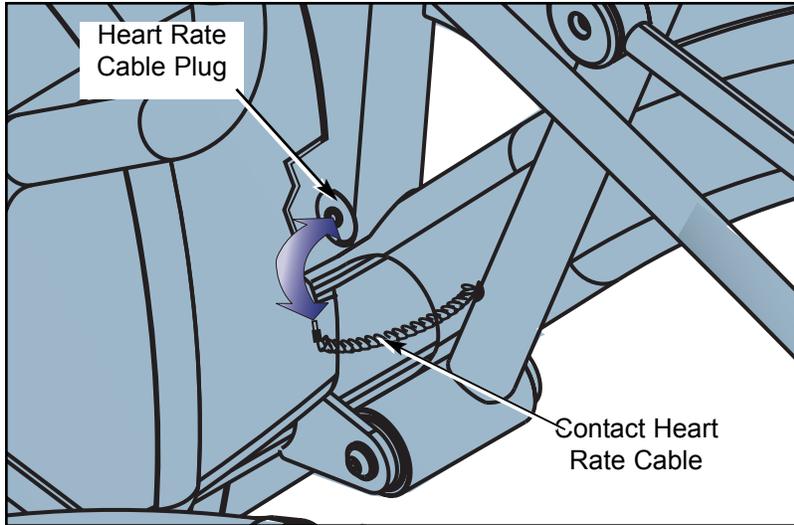


Figure 23

**4. Remove arm.**

- A. Using a 7/32" Allen wrench remove the two screws and two washers securing the arm to the frame.
- B. Remove arm from frame.

**5. Attach the new arm.**

- A. Slide the (appropriate) arm into the frame.
- B. Using a 7/32" Allen wrench secure the arm to the frame using the screws and washers removed in step 4A.
- C. Using a Phillips head screwdriver or 3/16" Allen wrench, attach handle link with the (appropriate) screw securing the cap. See Figure 24.

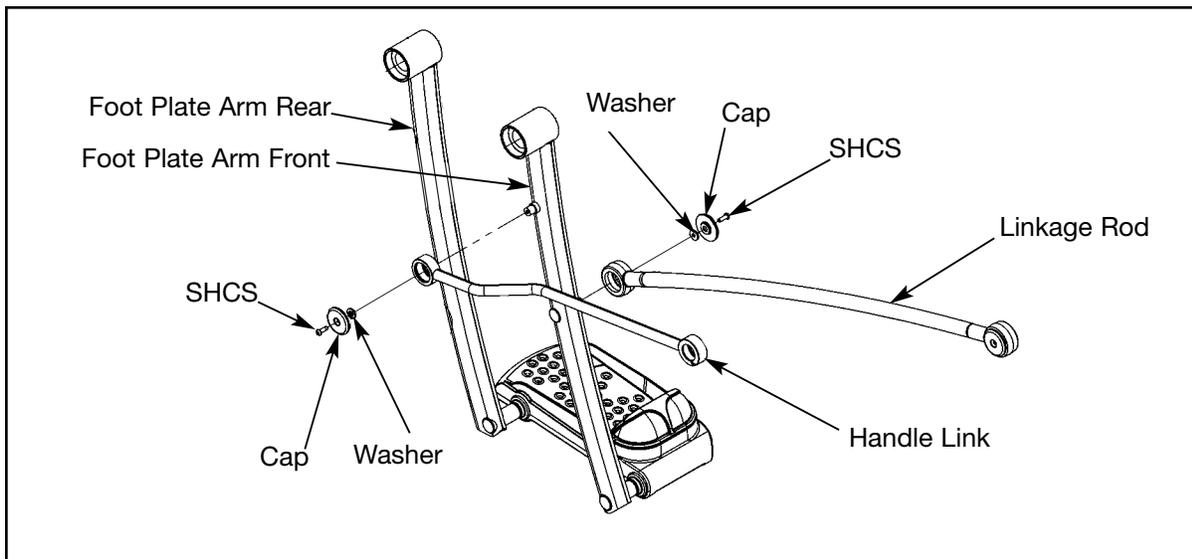


Figure 24

**6. Attach the new handle link.**

- A. Slide the handle link onto the arm shaft and foot plate arm shaft.
- B. Using a Phillips head screwdriver or 3/16" Allen wrench, secure handle link with the screws and (appropriate) cap removed in step 3A.

**7. Connect the contact heart rate cable.**

- A. Plug the contact heart rate cable into the plug in the main frame. See Figure 23.

**Pedal Arm and Foot Plates**

**NOTE:** The pedal arms and foot plates are removed in the same way. This procedure can be used for both.

**Tools Required**

- Phillips head screwdriver
- 3/16" Allen wrench
- Threadlocker

**1. Disconnect the external power source.**

- A. Turn the main power switch above the power inlet to the off (O) position.
- B. Unplug the power cord from the power outlet.

**2. Remove the foot plate and pedal arm.**

- A. Using a Phillips head screwdriver or 3/16" Allen wrench, remove each SHCS securing the (appropriate) cap. See Figure 25.
- B. Remove the cap.
- C. Slide the foot plate off the foot plate shafts (if applicable).
- D. Slide the (appropriate) arm off the shaft (or shafts).

**3. Attach the new foot plate and pedal arm.**

- A. Slide the (appropriate) arm on the shaft (or shafts).
- B. Slide the foot plate on the foot plate shafts (if applicable).
- C. Place a drop of threadlocker on one of the SHCS. Place another drop of threadlocker in the shaft (where the SHCS will be tightened into).
- D. Using a Phillips head screwdriver or 3/16" Allen wrench, attach cap with the (appropriate) SHCS securing the cap. See Figure 25. **NOTE:** SHCS must be tightened to a minimum of 100 inch-pounds.

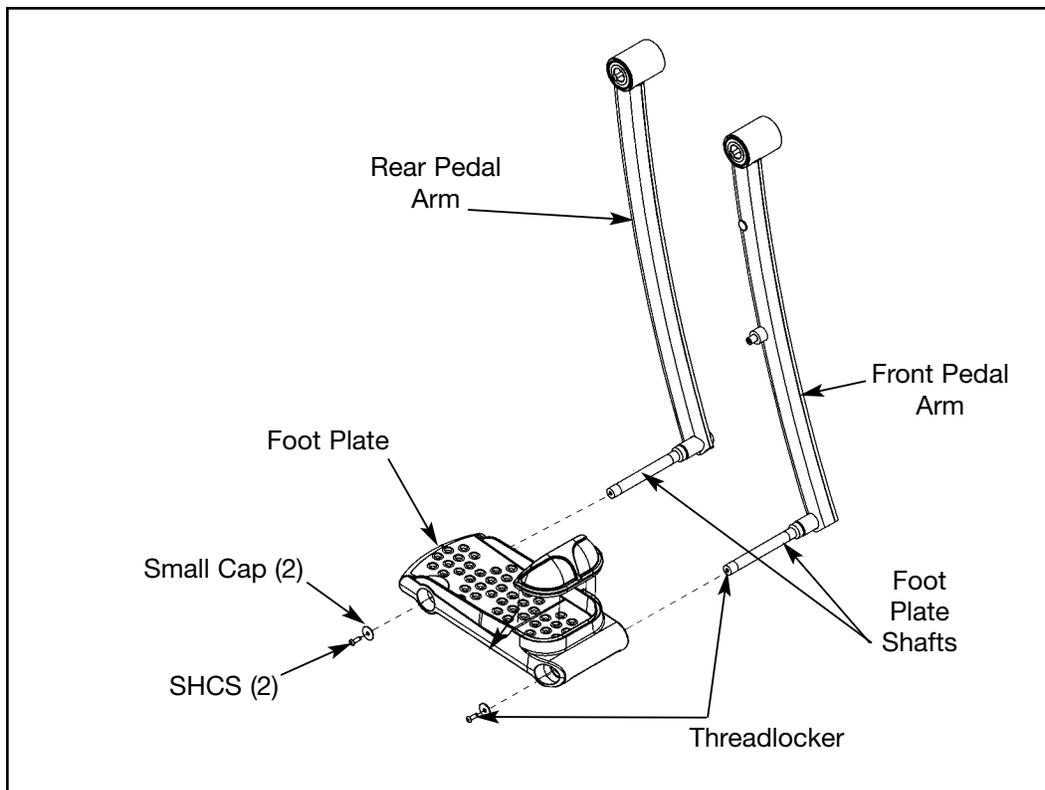


Figure 25

### Lower Control Board

#### Tools Required

- Phillips head screwdriver
- 3/8" Nutdriver or socket wrench
- ESD (Electro Static Discharge) grounding strap

***! WARNING: Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.***

#### 1. Disconnect the external power source.

- A. Turn the main power switch above the power inlet to the off (O) position.
- B. Unplug the power cord from the power outlet.

#### 2. Remove the access cover.

- A. Using a Phillips head screwdriver, remove the four screws securing the access cover. See Figure 2.
- B. Remove the access cover.

***! WARNING: Flywheel may be hot. Wait until it cools before servicing.***

**3. Disconnect the cables from the lower board.**

- A. Pull out on the lower board shield. **NOTE:** *It will snap out.*
- B. Disconnect the cables from the lower board. This includes the elevation motor cable, display cable (P1), AC line 1 (J3 black), AC line 2 (J7 white), eddy current brake cable (J1 and J2) and speed sensor cable (J4).
- C. Using a 3/8" nutdriver, remove the nut, washer and ground wire from the stud above the lower board. See Figure 10.

***! WARNING: Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.***

**4. Remove the lower board assembly.**

- A. Using a Phillips head screwdriver, remove the top two screws from the lower board assembly and loosen the bottom two screws.
- B. Slide the lower board assembly left and off the bottom screws. **NOTE:** *Cybex may want the old parts for evaluation. Call Cybex Customer Service to get an RMA number.*

**5. Attach the lower board assembly.**

- A. Place the lower board assembly over the two bottom screws and slide it to the right.
- B. Using a Phillips head screwdriver, attach the top two screws removed in step 4A and tighten the bottom two screws.

**6. Connect the cables to the lower board.**

- A. Connect the cables to the lower board. This includes the elevation motor cable, display cable (P1), AC line 1 (J3 black), AC line 2 (J7 white), eddy current brake cable (J1 and J2) and speed sensor cable (J4).
- B. Place the washer (first) and the ground terminal (next) onto the stud and tighten with the nut removed during step 3C.
- C. Place the lower board shield in position and snap it in.

**7. Test the unit for proper operation.**

- A. Connect the power cord into the power outlet.
- B. Turn the main power switch above the power inlet to the on (I) position.
- C. Operate the unit at all levels to verify proper operation.

## Lower Control Board Fuses

### TOOLS REQUIRED

- Phillips screwdriver
- Needle nosed pliers
- Two (2) Fuses, part number EF-12417.

### 1. Disconnect the external power source.

- A. Turn the main power switch above the power inlet to the off (0) position.
- B. Unplug the power cord from the power outlet.

**! WARNING: Disconnect the power cord before continuing this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.**

### 2. Remove the access cover.

- A. Using a Phillips screwdriver, remove the four screws and four washers securing the access cover. See Figure 2.
- B. Remove the access cover.

**! WARNING: Flywheel may be hot. Wait until it cools before servicing.**

**! WARNING: Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.**

### 3. Replace the fuses.

- A. Locate the lower board.
- B. Pull out on the lower board shield (it will snap out). See Figure 26.
- C. Locate the fuses in the upper left hand corner of the control board. See Figure 26.
- D. Replace the old fuses with the new fuses.
- E. Place the lower shield (removed in step 5B) into position and secure the finned fasteners (the shield with snap in).
- F. Attach the access cover removed in steps 2A and 2B. **NOTE:** Be careful not to pinch any cables.

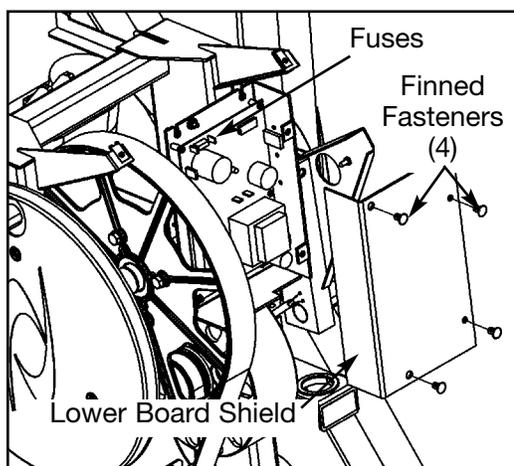


Figure 26

## Upper Display Board

### Tools Required

- Phillips head screwdriver
- ESD (Electro Static Discharge) grounding strap

### 1. Disconnect the external power source.

- A. Turn the main power switch above the power inlet to the off (O) position.
- B. Unplug the power cord from the power outlet.

**NOTE:** Wear an ESD strap for the rest of this procedure.

### 2. Remove the console front.

- A. Using a Phillips head screwdriver, remove the screw securing the access cover to the console back. See Figure 27.
- B. Using a Phillips head screwdriver, remove the four screws securing the console front to the console back.
- C. Gently pull the console front forward and disconnect these cables from the display board: the display cables; the contact heart rate cables; ground wire and the polar heartrate cable. See Figure 28.

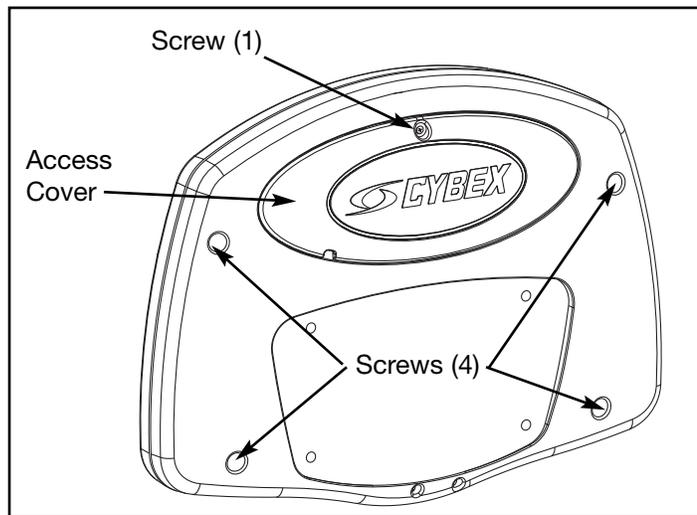


Figure 27

### 3. Remove the display board.

- A. Using a Philips head screwdriver, remove the five display board mounting screws.
- B. Lift and rotate the display board to the right and unplug the three overlay ribbon cables from the display board. Set the display board aside. **NOTE:** Cybex may want the old parts for evaluation. Call Cybex Customer Service to get an RMA number.

### 4. Attach the new display board.

- A. Plug the overlay ribbon cables into the appropriate connectors in the display board.
- B. Using a Phillips head screwdriver, securing the display board to the console with the five screws removed in step 3A.

### 5. Connect the cables.

- A. Connect these cables into the display board: the display cable; the two upper switch overlay connectors; the lower switch overlay connector; the contact heart rate cable; ground wire and the polar heartrate cable. See Figure 28.

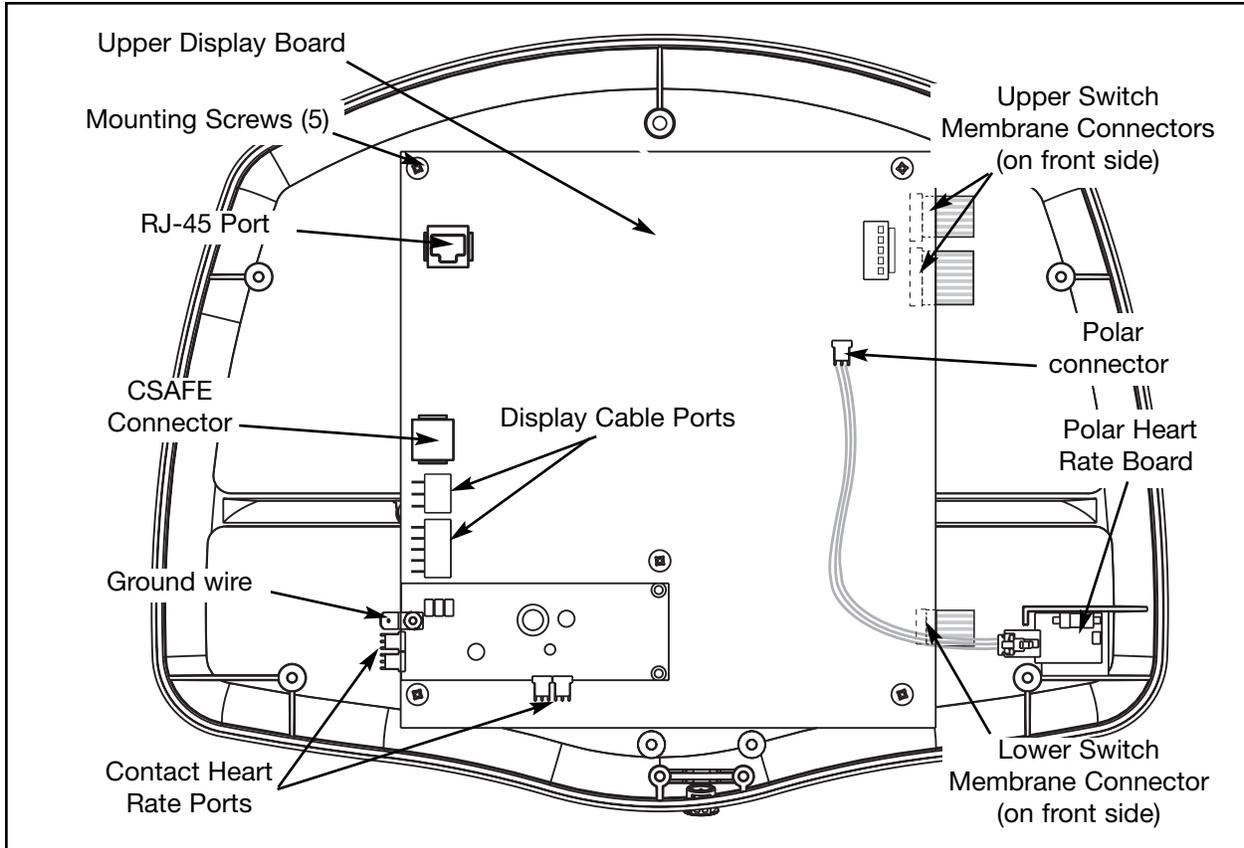


Figure 28

**6. Check the connections:**

- A.** Check to see that all of the cables are connected firmly in their proper place.

**7. Secure the console back.**

- A.** While being sure not to pinch any cables, use a Phillips head screwdriver to tighten four screws securing the console front to the console back.
- B.** Using a Phillips head screwdriver secure the access cover to the console back with the screw removed in step 2A.

## **Upper Display Cable**

### **Tools Required**

- 7/32" Allen wrench
- Phillips head screwdriver
- ESD (Electro Static Discharge) grounding strap

### **1. Disconnect the external power source.**

- A. Turn the main power switch above the power inlet to the off (O) position.
- B. Unplug the power cord from the power outlet.

**NOTE:** *Wear an ESD strap for the rest of this procedure.*

### **2. Remove the console front.**

- A. Using a Phillips head screwdriver, remove the screw securing the access cover to the console back. See Figure 27.
- B. Using a Phillips head screwdriver, remove the four screws securing the console front to the console back. See Figure 27.
- C. Gently pull the console front forward and disconnect these cables from the display board: the display cable; the contact heart rate cable; ground wire and the polar heartrate cable. See Figure 28.

### **3. Remove the console mount.**

- A. Using a 7/32" Allen wrench, remove the four screws and four lock washers securing the console mount in place. See Figure 29.
- B. Remove the console mount by lifting upward.

### **4. Remove the upper display cable.**

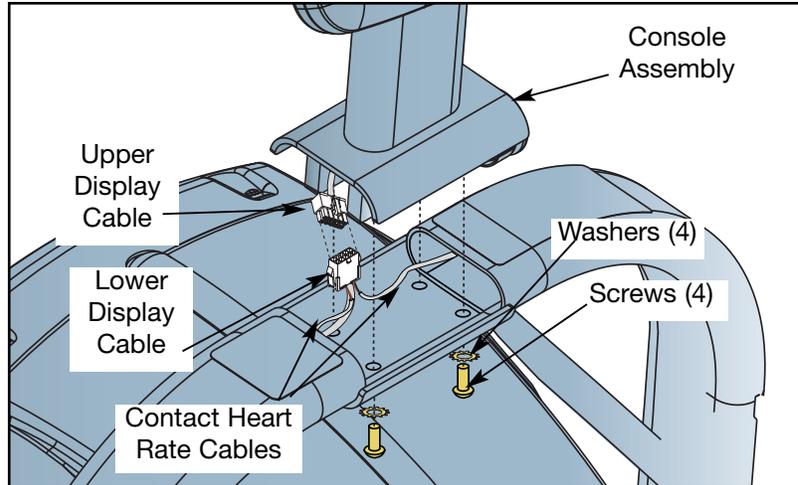
- A. Disconnect the upper display cable from the lower display cable. See Figure 29.

### **5. Attach the new upper display cable.**

- A. Locate the end of the upper display cable with the single connector. See Figure 29.
- B. Connect the upper display cable to the lower display cable. **NOTE:** *If you are changing the lower display cable disregard this step.*

**7. Attach the console mount.**

- A. Insert the upper display cable into the console mount and place on top of the base assembly. See Figure 29.
- B. Using a 7/32" Allen Wrench, attach the four screws and four lock washers securing the console mount in place.



**5. Connect the cables.**

- A. Connect these cables into the display board: the display cable; the two upper switch membrane connectors; the lower switch membrane connector; the contact heart rate cable and the polar heartrate cable. See Figure 28.

Figure 29

**6. Check the connections:**

- A. Check to see that all of the cables are connected firmly in their proper place.

**7. Secure the console back.**

- A. While being sure not to pinch any cables, use a Phillips head screwdriver to tighten four screws securing the console front to the console back removed in step 2B.
- B. Using a Phillips head screwdriver secure the access cover to the console back with the screw removed in step 2A.

**Lower Display Cable**

**Tools Required**

- Flat head screwdriver
- Phillips head screwdriver
- 9/16" Open-end wrench or socket wrench
- 3/16" Allen wrench
- Tape
- Wire Cutters

***! WARNING: Disconnect the power cord before beginning this procedure. Keep wet items away from inside parts of the unit. Electrical shock could occur even if the unit is unplugged.***

**1. Disconnect the external power source.**

- A. Turn the main power switch above the power inlet to the off (O) position.
- B. Unplug the power cord from the power outlet.

2. Remove the access cover.

- A. Using a Phillips head screwdriver, loosen the four screws securing the access cover. See Figure 2.
- B. Remove the access cover.

3. Remove the console assembly.

- A. Using an Allen wrench, remove the four screws and four lock washers securing the console assembly in place.
- B. Carefully lift console assembly and disconnect the upper display cable from the lower display cable. See Figure 29.

4. Remove the left wheel.

- A. Place a wooden block under the unit to take the weight off the left wheel.
- B. Using a 9/16" wrench and a 3/16" Allen wrench, remove the bolt and nut securing the left wheel in place. See Figure 30.

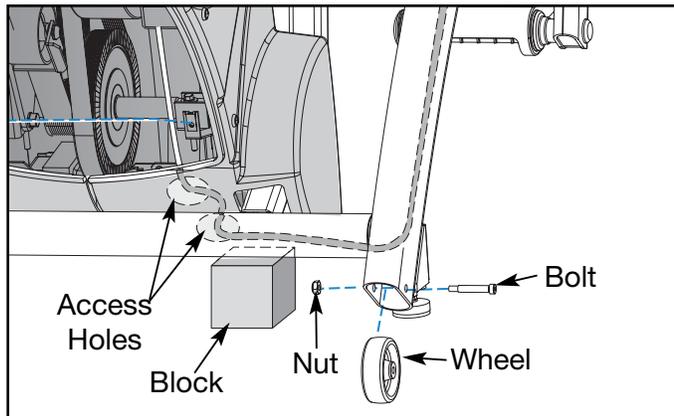


Figure 30

5. Detach the lower display cable.

**! WARNING: Do not touch components on the lower board. A charge can remain after unplugging the power cord and turning off the unit.**

- A. Pull out on the lower board shield.  
**NOTE: It will snap out.**
- B. Disconnect the display cable from the lower board. See Figure 31.
- C. Remove the lower display cable from the wire holder bracket. See Figure 31.

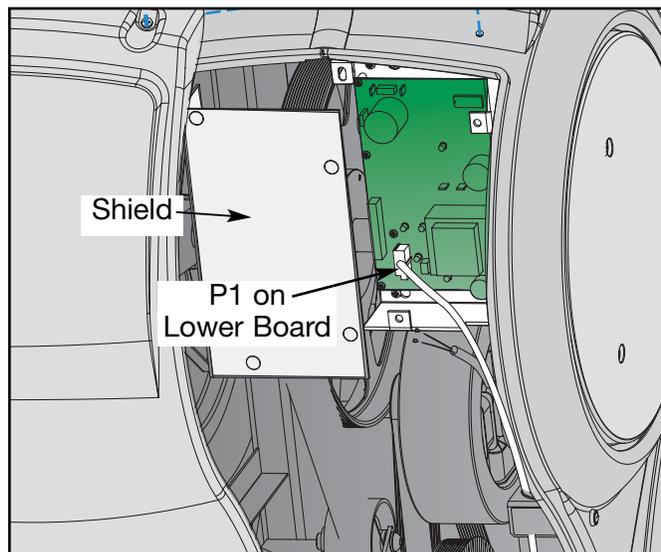


Figure 31

6. Attach the new lower display cable.

- A. Using wire cutters, cut both sets of the old contact heart rate cables from the old lower display cable (these are the small pairs of brown and black cables). See Figure 29.

**NOTE: The heart rate cables have a left and a right side, they must be wired correctly.**

- B. Locate the new contact heart rate cables connected to the lower display cable. The right side cables are located in the outermost locations in the lower display cable connector. See Figure 32.

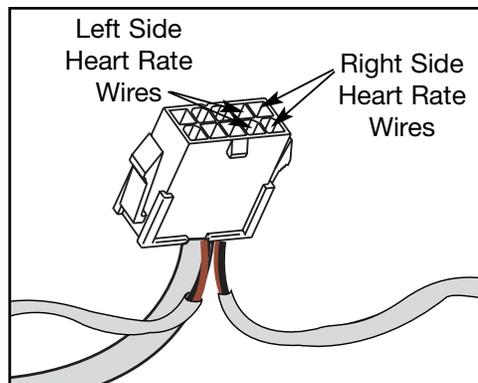


Figure 32

- C. Tape the new pairs of contact heart rate wires to the old wires cut in step 6A. See Figure 33. **NOTE:** One brown wire and one black wire make a pair.
- D. Locate the new cable's 10 pin connector end of the lower display cable.
- E. Tape the new 10 pin connector to the old lower display cable. **NOTE:** Be sure to tape the correct ends together. See Figure 33.

- F. Using a flat head screwdriver pry the contact heart rate cable plug out of the frame. See Figure 23.

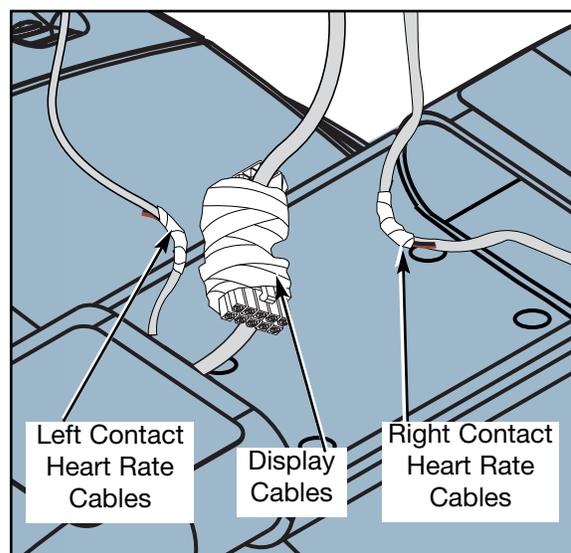


Figure 33

- G. Gently pull all three cables through the frame tubes. See Figure 34. **NOTE:** Stop pulling when the new cables exit the frame tubes.
- H. Remove the tape and discard the old cable.
- I. Confirm that the cable is routed through the access holes (see Figure 30) and through the wire holder bracket (see Figure 35).

- J. Connect the display cable to the lower control board.

- K. Connect the contact heart rate cables to the cable plugs removed in step 6F.

- L. Plug the two contact heart rate cable sockets into the frame.

**7. Attach the console.**

- A. Place the console assembly in position and connect the upper display cable to the lower display cable. See Figure 29.
- B. Using an Allen wrench, attach the four screws and four lock washers securing the console assembly in place.

**8. Secure the cable.**

- A. Check to see that all of the connectors are connected firmly in their proper place.
- B. Place the lower board shield in position and snap it in.

**9. Attach the access cover.**

- A. While being sure not to pinch any cables, place the access cover in position.
- B. Using a Phillips head screwdriver, attach the four screws removed in step 2A.

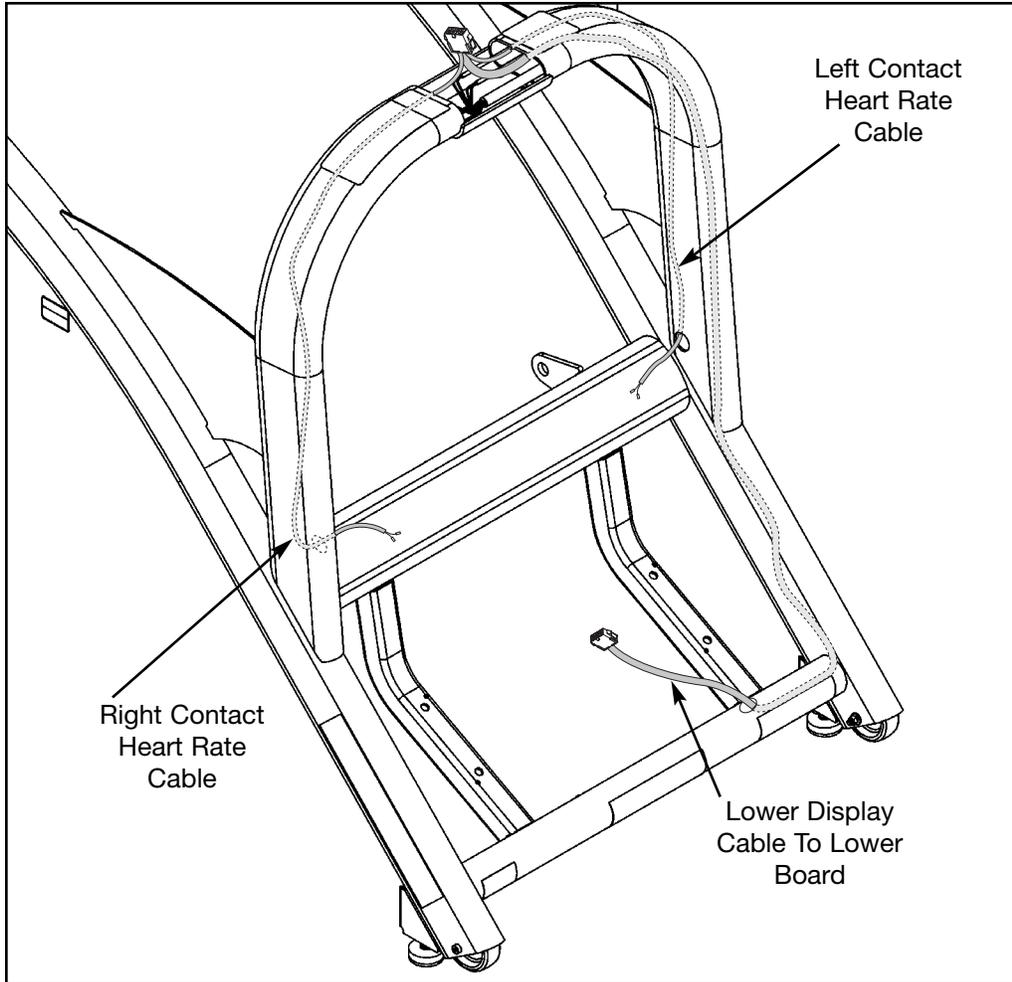


Figure 34 **NOTE:** Frame only shown for cable routing.

**10. Attach the left wheel.**

- A. Using a 9/16" wrench and a 3/16" Allen wrench, attach the bolt and nut securing the left transport wheel in position. See Figure 30.
- B. Remove the wooden block from under the unit.

**11. Test the unit for proper operation.**

- A. Connect the power cord into the power outlet.
- B. Turn the main power switch above the power inlet to the on (I) position.
- C. Operate the unit at all levels to verify proper operation.

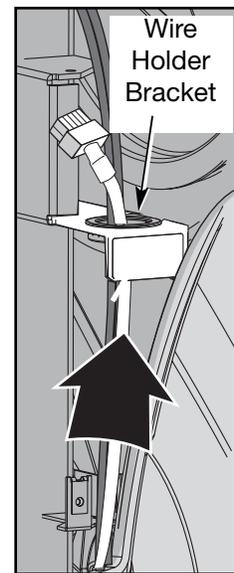


Figure 35

## Display Overlays

**NOTE:** This procedure will cover the upper and/or lower display overlay. They are removed and replaced the same.

### Tools Required

- Phillips head screwdriver
- ESD (Electro Static Discharge) grounding strap
- Razor blade

#### 1. Disconnect the external power source.

- A. Turn the main power switch above the power inlet to the off (O) position.
- B. Unplug the power cord from the power outlet.

**NOTE:** Wear an ESD strap for the rest of this procedure.

#### 2. Remove the top console front.

- A. Using a Phillips head screwdriver, remove the screw securing the access cover to the console back. See Figure 27.
- B. Using a Phillips head screwdriver, remove the four screws securing the console front to the console back.
- C. Gently pull the console front forward and disconnect these cables from the display board: the display cables; the contact heart rate cables; ground wire and the polar heartrate cable. See Figure 28.
- D. Using a Philips head screwdriver, remove the five display board mounting screws.
- E. Lift and rotate the display board to the right and unplug the three overlay ribbon cables from the display board. Set the display board aside.

#### 3. Remove the display overlays.

- A. Use a razor blade to peel up a corner of the upper and lower display overlays and pull off the overlays.

#### 4. Attach the display overlays.

- A. Remove the paper backing from the new display overlays.
- B. Slide the ribbon cable through the slot.
- C. Carefully place the display overlays in place within the indentation on the console front.
- D. Firmly rub the display overlays so that it adheres to the console.

#### 5. Attach the display board.

- A. Plug the overlay ribbon cables into the appropriate connectors in the display board.

- B.** Place the display board in position and secure with five mounting screws removed in step 2D.
- C.** Place the console front in position and connect these cables to the display board: the display cables; the contact heart rate cables; ground wire and the polar heartrate cable. See Figure 28.

**6. Attach the console front.**

- A.** While being sure not to pinch any cables, secure the console front to the console back with the four Phillips head screws removed in step 2B.

**7. Attach the access cover.**

- A.** Using a Phillips head screwdriver, secure the access cover to the console back with the screw removed in step 2A. See Figure 27.

**8. Test the new display overlay.**

- A.** Turn the main power switch to the on (I) position.
- B.** Plug the unit into the power outlet.
- C.** Try each key to be sure that it functions properly.

**Parts List**

**NOTE:** *Parts lists and exploded views are on the pages that follow.*

## Cybex Arc Trainer 610A Service Manual

### Main Assembly

ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
A1	2	11090-404	Cybex Decal	A54	2	FO100009	O-Ring
A2	2	11090-405	Foot Pad	A55	1	FT-17242	Top Elevation Mounting Sleeve
A3	1	600A-301	Arc Warranty Sheet (not shown)	A56	1	FT-17243	Bottom Elevation Mounting Sleeve
A4	8	600A-311	Flange Spacer	A57	8	HB-17036	Ball Bearing
A5	1	610A-100	Contact Grip Assembly (pair)	A58	4	JC700412	BHSCS .375-16 x .50
A6	1	610A-200	Main Frame	A59	4	JC700422	BHSCS .375-16 x 1.50
A7	1	610A-201	Foot Plate Arm Left Rear	A60	3	HC701226	HHCS .375-16 x 2.0
A8	1	610A-202	Foot Plate Arm Right Rear	A61	1	HC701230	HHCS .375-16 x 2.50
A9	1	610A-203	Foot Plate Arm Left Front	A62	4	HC701232	HHCS .375-16 x 2.75
A10	1	610A-204	Foot Plate Arm Right Front	A63	2	HF449064	Insert
A11	2	610A-205	Handle Link	A64	2	HG700022	Leveling Guide
A12	1	610A-208	Arm Right Hand	A65	12	HM582514	Pan Head Phillips 10-32 x .62
A13	1	610A-209	Arm Left Hand	A66	2	HN-60064	Jam Nut
A14	1	610A-300	Foot Plate Right	A67	2	HN624901	Nylon Locknut
A15	1	610A-301	Foot Plate Left	A68	2	HN704000	Hex Nut
A16	2	610A-302	Toe Cap	A69	4	HN706300	K Lock Nut
A17	1	610A-303	Pivot Cover Right Hand	A70	18	HS100000	Nylon Finishing Washer
A18	1	610A-304	Pivot Cover Left Hand	A71	4	HS307602	Washer
A19	8	610A-311	Pivot Shaft Retainer	A72	2	HS328300	Split Lockwasher
A20	4	610A-342	Pivot Pin	A73	4	HS347600	Washer
A21	2	610A-344	Crank Pin	A74	10	HS347700	Washer
A22			Removed	A75	17	HT512517	Pan HD Phil HD Self Tapping Screw
A23	2	610A-350	End Cap	A76	8	HT552512	Pan HD Phil HD Self Tapping Screw
A24	2	610A-351	Pivot Pin	A77	2	HT552515	Pan HD Phil HD Self Tapping Screw
A25	1	610A-352	Installation Poster (not shown)	A78	1	HT572512	Pan HD Phil HD Self Tapping Screw
A26	2	610A-356	Spacer Tube	A79	2	HX-16751	Frame Tube Cap
A27	4	610A-357	Spacer Tube	A80	2	HX-17023	Spring Pin
A28	2	610A-358	Plastic Insert	A81	4	HX-17143	Retaining Ring
A29	1	AF-16655	Linkage Rod Right	A82	1	HX-17270	H-Shaped Rubber Gasket
A30	2	AF-16694	Pillow Block Bearing	A83	1	HX-17271	H-Shaped Rubber Gasket
A31	1	AF-16999	Linkage Rod Left	A84	12	HX620415	BHSCS .250-20 x .75
A32	2	AF-17020	Crank Cover Mounting Bracket	A85	2	HX620420	BHSCS .250-20 x 1.250
A33	1	AW-18285	610A Frame Harness	A86	2	JD623324	Shoulder Bolt
A34	2	AW-18286	610A Grip Cable (not shown)	A87	4	JS347400	Internal Tooth Lockwasher
A35	1	AX-17156	Drive Frame Assembly	A88	1	MR-16518	Elevation Motor
A36	2	BK030204	Hex Key (not shown)	A89	8	PL-16535	Linkage Rod Cap
A37	1	BK030205	Hex Key (not shown)	A90	2	PL-17027	Crank Cover
A38	4	BR030225	Retaining Ring	A91	1	PL-17029	Elevation Motor Access Cover
A39	1	CM000240	Warning Decal	A92	1	PL-17046	Right Cover
A40	2	CW-17231	Tensioner Wheel	A93	1	PL-17047	Left Cover
A41	1	DE-17317	Arc Trainer Logo Decal	A94	1	PL-17048	Front Access Cover
A42	2	DE-17339	Cybex Vortex Decal	A95	1	PL-17209	Water Bottle Holder
A43	2	EW000028	Cable Tie (not shown)	A96	4	PL-17279	Foot Plate Spacer Shaft
A44	1	EW600006	Daisy Chain Jumper Cord (not shown)	A97	1	DE-17315	ETL Label
A45	4	FB030232	Bearing	A98	2	PR400205	Grip
A46	4	FB030244	Bearing	A99	2	YD000026	Double Coated Tape
A47	8	FB030247	Bearing	A100	1	DE-17266	UL Decal
A48	4	FB030248	Bearing	A101	1	DE-17322	Service Schedule and Error Decal
A49	4	FC030004	Tolerance Ring	A102	2	DE-17219	Caution Decal
A50	4	FC030005	Tolerance Ring	A103	1	DE-17218	Heart Rate Zone Decal
A51	4	FC030006	Tolerance Ring	A104	1	610A-349	Warning Decal
A52	8	FC030007	Tolerance Ring	A105	8	HX700415	BHSCS .375-16 x .75 SS
A53	2	FM-17037	Crank Arm				





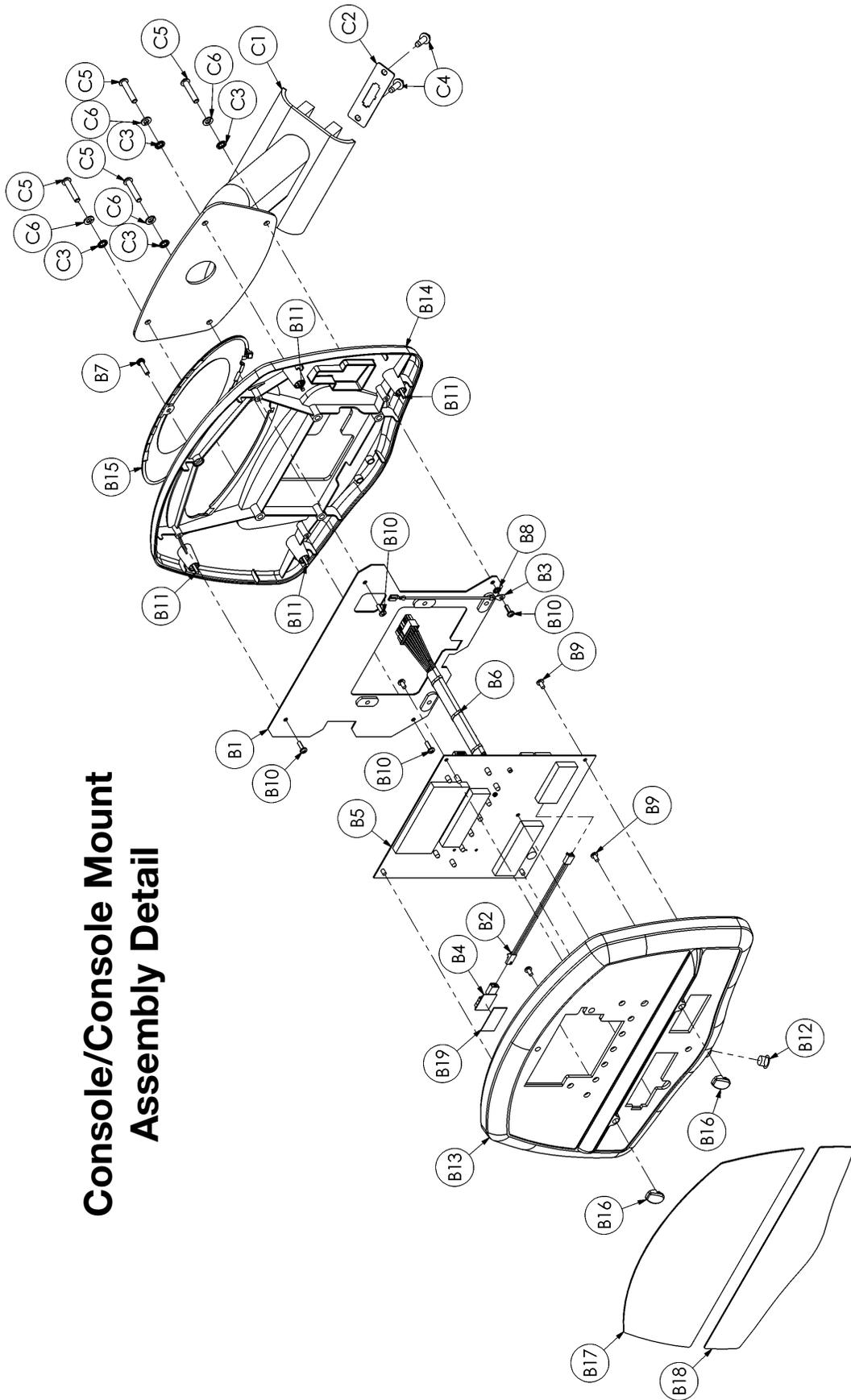


## Cybox Arc Trainer 610A Service Manual

### Console/Console Mount Assembly

ITEM	QTY	PART NO.	DESCRIPTION
B1	1	610A-102	Console Mounting Plate
B2	1	610A-103	Embedded Polar Jumper Cable
B3	1	610A-104	Ground Cable
B4	1	610A-105	Polar Wireless Remote Mount Sensor
B5	1	AD-18282	610A Main Display PCA
B6	1	AW-18284	610A Console Harness
B7	1	HJ582515	Phil Pan Screw 10-32 x .75
B8	1	HS087300	External Tooth Lockwasher
B9	7	HT552509	Tap Screw 8-16 x .31
B10	4	HT552512	Pan HD Phil HD Self Tapping
B11	4	HT552515	Pan HD Phil HD Self Tapping
B12	1	PP080207	Plastic Insert
B13	1	PP620003	Front Plastic Console
B14	1	PP620004	Rear Plastic Console
B15	1	PP620005	Console Access Cover
B16	2	PP620006	Book Holder Tab
B17	1	SW-18275-4	610A Top Universal Membrane
B18	1	SW-18276-4	610A Bottom W/O AV, U Membrane
B19	1	01250	Double Coated Tape
C1	1	610A-206	Console Mount
C2	1	610A-348	Mounting Plate
C3	4	HS307400	Internal Tooth Lockwasher
C4	2	HT621115	Tap Screw .250-20
C5	4	HX620420	BHSCS .250-20 x 1.25
C6	4	HS307601	Washer

**Console/Console Mount  
Assembly Detail**

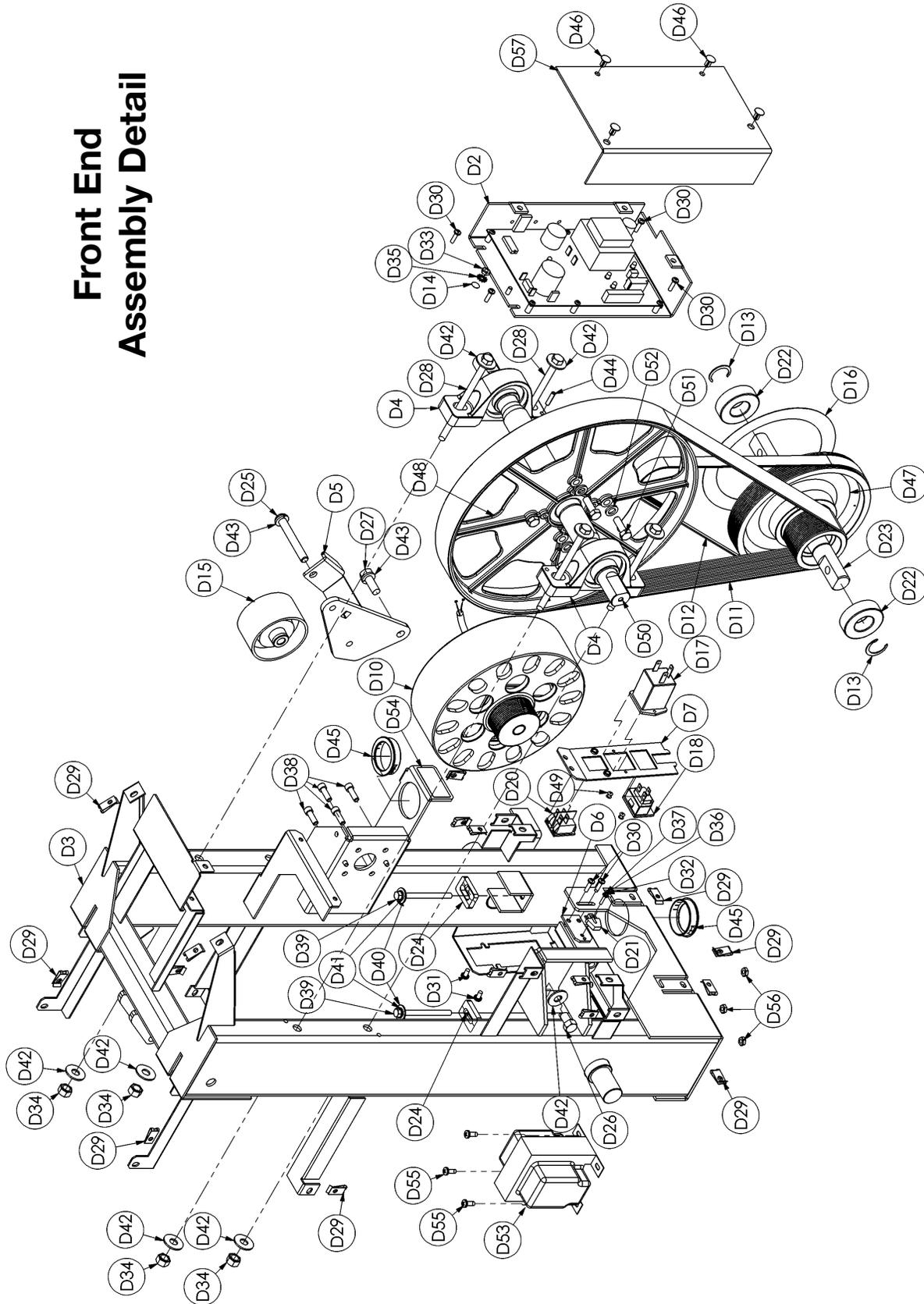


**Cybox Arc Trainer 610A Service Manual**

**Front End Assembly**

<b>ITEM</b>	<b>QTY</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>
D1	1	AX-17156	Front End Assembly
D2	1	AD-16982	PCA Control Board Eddy Current
D3	1	AF-16483	Frame Front
D4	2	AF-16694	Pillow Block Bearing Assembly
D5	1	AF-17060	Tensioner Wheel Bracket
D6	1	AF-17141	Speed Sensor Bracket
D7	1	AF-17216	Power Switch Plate
D8	1	AW-17098	Power Inlet Jumper Brown (not shown)
D9	1	AW-17099	Power Inlet Jumper Blue (not shown)
D10	1	AX-17208	ECB
D11	1	BD-16671	Belt
D12	1	600A-322	Secondary Drive Belt
D13	2	BR030221	Retaining Ring
D14	1	CM000237	Safety Ground Decal
D15	1	CW-17063	Tensioner Wheel
D16	1	DE-17019	Speed Sensor Wheel
D17	1	EC-17096	Filtered IEC-320 Power In Module
D18	1	EC-17097	IEC Auxiliary AC Outlet Module
D19	2	EF000000	Fuse (not shown)
D20	1	ES000000	On-Off Switch
D21	1	EW600003	Cable Opto Sensor Armored
D22	2	FB030243	Bearing
D23	1	FM-16859	Lower Shaft
D24	2	FM-17146	Belt Spacer
D25	1	HC700432	BHSCS .375-16 x 2.75
D26	1	HC701214	HHCS .375-16 x .62
D27	1	HC701217	HHCS .375-16 x 1.00
D28	4	HC701252	HHCS .375-16 x 5.25
D29	16	HF579000	U Type Panel Nut
D30	6	HJ542514	Pan Head Phillips 8-32 x .62
D31	2	HJ582510	Pan Head Phillips 10-32 x .38
D32	1	HM522514	Pan Head Phillips 4-40 x .62
D33	1	HN586300	K-Lock Nut
D34	4	HN706300	K-Lock Nut
D35	1	HS047300	Lockwasher
D36	1	HS047600	Washer
D37	1	HS048300	Split Lockwasher
D38	4	HS-17055	SHCS .250-20 x .75
D39	2	HS-17145	Hex Head Tap Screw .350-20 x 2.50
D40	2	HS307600	Washer
D41	2	HS308300	Split Lockwasher
D42	9	HS347700	Washer
D43	2	HS348300	Split Lockwasher
D44	2	HX-17023	Spring Pin
D45	2	HX-17050	Bushing
D46	4	PP660010	Finned Fastener
D47	1	PW-16521	Drive Pulley
D48	1	PW-17016	Pulley
D49	2	HR269600	Dome Head Rivet
D50	1	600A-100	Shaft
D51	4	HC661217	HHCS .312-18 x 1.00
D52	4	HS760100	Spring Retaining Washer
D53	1	AX-17259	Power Pack 230 V
D54	1	DE-17155-4	Warning Decal
D55	3	HJ582512	SEMS 10-32 x .5
D56	3	HN586300	K-Lock Nut
D57	1	600A-318	Cover Controller

# Front End Assembly Detail



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