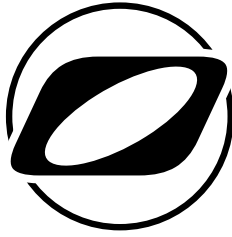
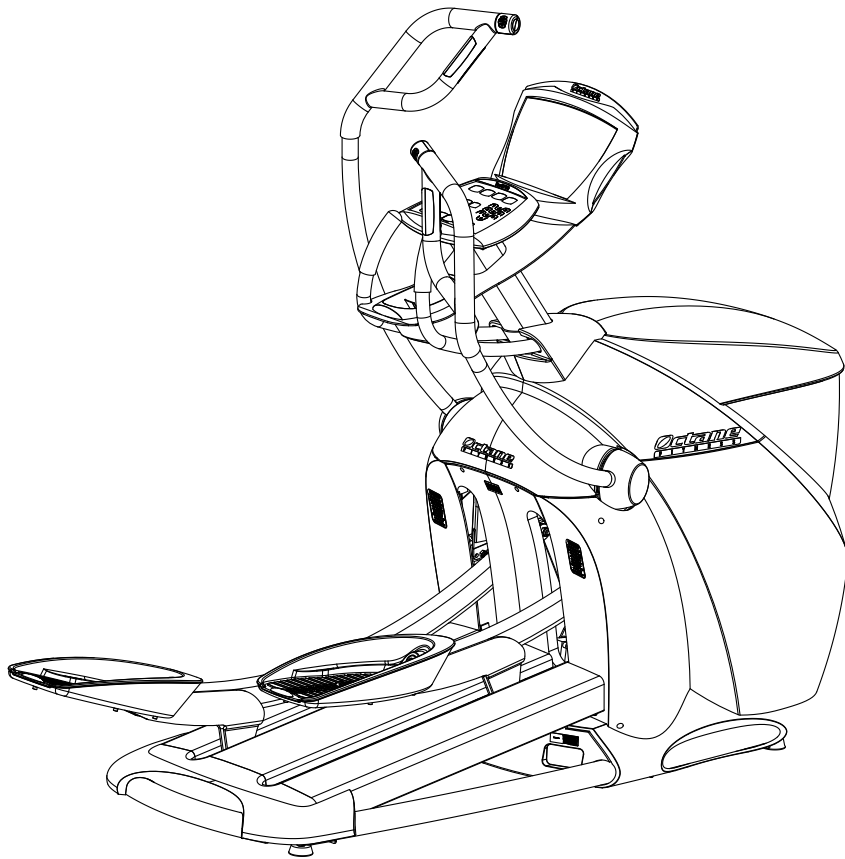


PRO4700



QUICK SERVICE GUIDE



OctaneTM
FITNESS

PRO4700

Quick Service Guide

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Section I: General Service Notes

1.1 PRO4700 Product Features

Octane Fitness' new PRO4700 offers new product features not found on previous PRO Series models, including:

- New shrouds and track covers***
- Unique diagnostics for troubleshooting components***
- Modified console and keypad connections***
- Integrated CSAFE protocol and COAX connection points***
- One-time adjustable stride length***

This Quick Service Guide describes the information needed to service these and other unique components. Refer to the PRO4500 Service Manual for information regarding common parts replacement and general servicing of this generation of Octane Fitness PRO Series ellipticals.

1.2 Accessing the Inside of the Machine

To remove the top cover, access panel, and side shrouds:

1. Remove the mast boot by pulling the two sides apart at the seam, then use a Phillips screwdriver to remove the two (2) screws with washers securing the top cover. Grasp the front edge of the cover and remove it.
2. Use a Phillips screwdriver to remove the five (5) screws securing the left side shroud. Loosen the screw at the tab where the side shroud and access panel meet, then grasp the side shroud at the bottom and remove it (Figure 1.1).
3. Remove the two (2) screws at the back of the right side shroud. Loosen the screw at the tab where the right side shroud and the access panel meet, then grasp the shroud at the bottom and remove it.
4. Remove the two handle bar covers and the two (2) Phillips screws on the back (user side) of the access panel (Figure 1.2). Grasp the back of the access panel and pull it off of the frame, then flex and turn the access panel as necessary to maneuver it around the mast and remove it.

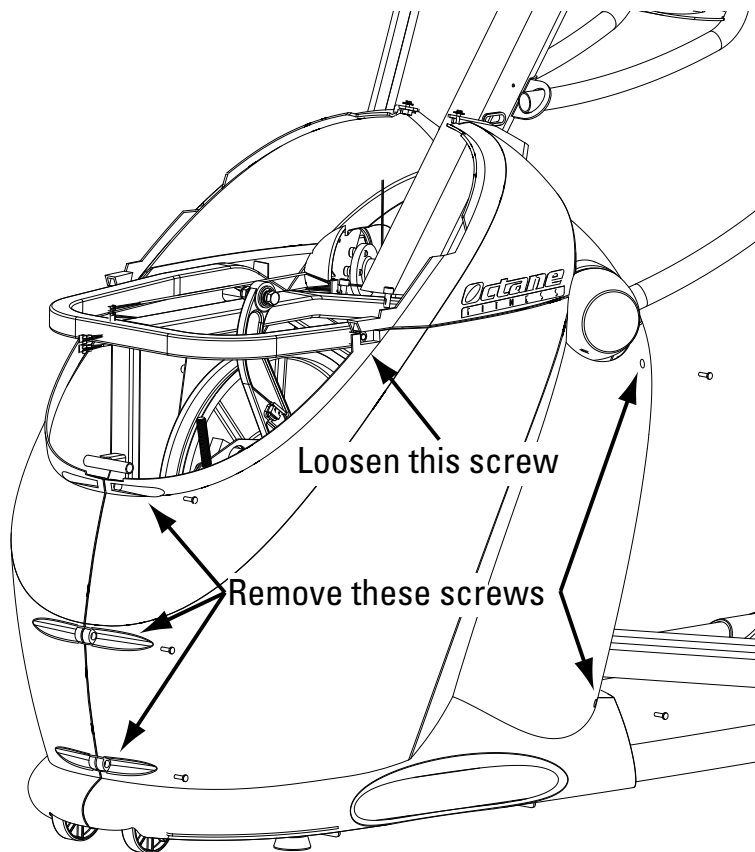


Figure 1.1

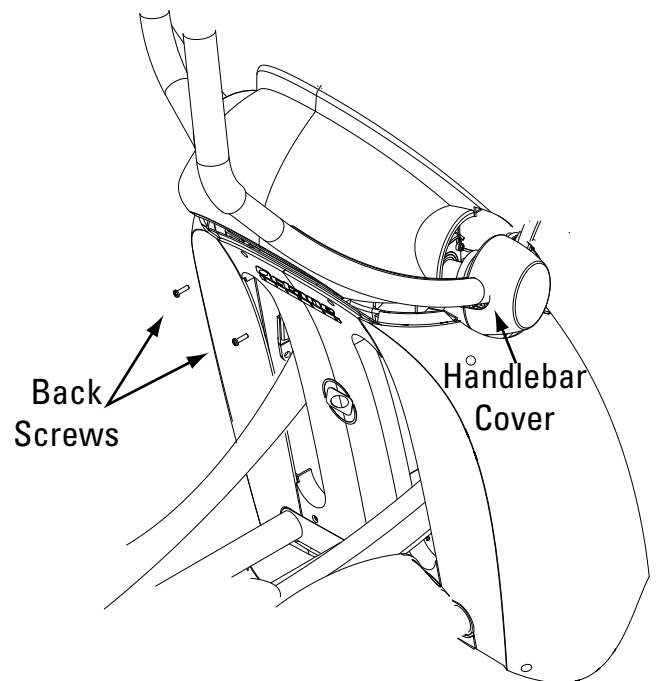


Figure 1.2

To replace the side shrouds, access panel, and top cover::

1. Slide the metal plate of the access panel (Figure 1.3) behind the back shroud. Flex and move the panel as necessary to maneuver it around the mast and arms. You may need to move the arms as well in order to get the panel into place. (Do not secure it until after the side shrouds are in position.)
2. Position the right side shroud and tighten the two screws securing the back of the shroud, leaving the screw by the tab loose.
3. Position the left side shroud and secure two screws at the back. Position the access panel and fit the tabs on each side of the access panel into the slots between the side of the main shroud and the frame, over the top of the screws. Fit and hold the two side shrouds together at the front of the machine, then secure with the three (3) screws.
4. Verify that the access panel is properly seated, then secure the two (2) screws at the back of the access panel and the screws on each side at the tabs. Replace the handlebar covers.
5. Align top cover on top of main housing. Hold the back edge (near the mast) in place and shift the front edge forward until it settles into position.
4. While still holding the back edge in place, press firmly on the bottom edge of the front of the cover until it snaps into place (Figure 1.4). **You will feel and hear it snap into place as the plastic bracket on the inside of the front bottom edge clips onto the steel tube at the front of the main frame.**
5. Secure the top cover to the frame using 2 Phillips screws with washers.
6. Place the rubber mast boot around the mast, covering the open ends of the stationary handlebars. Tuck the ends of the mast boot into the channels in the access panel just below the stationary handlebars.

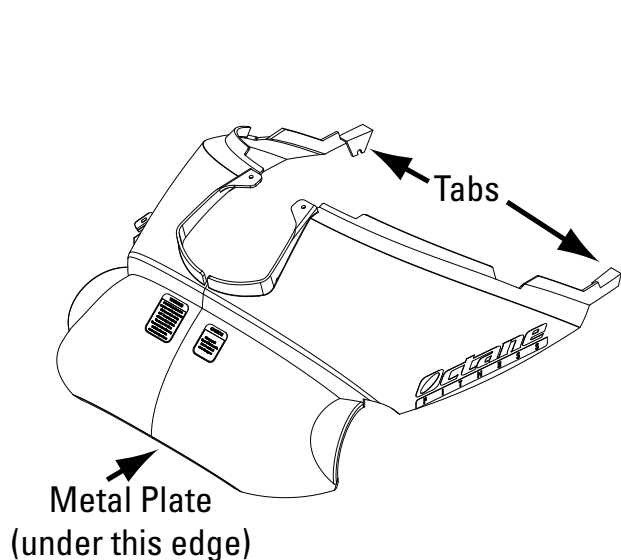


Figure 1.3

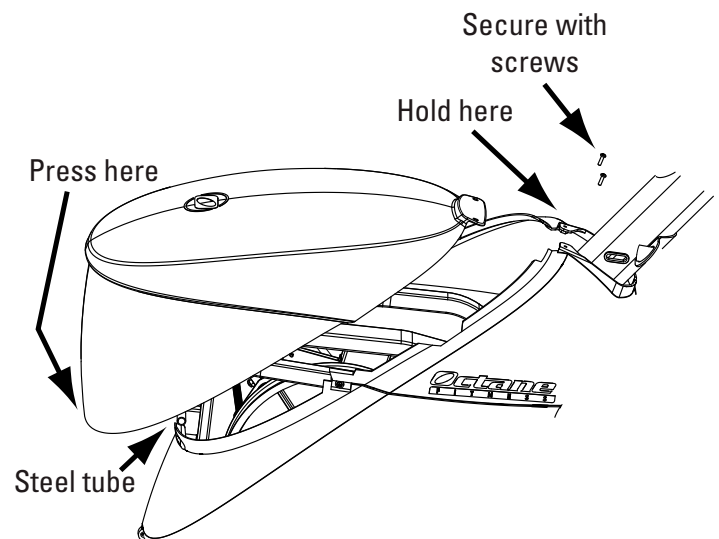


Figure 1.4



***WARNING: LINKAGES PRESENT
NUMEROUS PINCH POINTS.
USE CAUTION TO AVOID INJURY.**

1.3 Removing Track Covers

The PRO4700 features track covers to minimize dust and dirt that could cause wheel noise or wheel damage. Therefore, the wheels and tracks do not need to be cleaned and maintained in the same way that other Octane units have been. **DO NOT USE ANY CLEANERS ON THE TRACKS. DO NOT USE WD-40 OR ANY TYPE OF SILICONE SPRAY—IF USED IT CAN CAUSE AN INCREASE IN ROLLER WHEEL SQUEAKING).**

Follow these steps to remove the track covers should you need to service the wheels or tracks:

1. Grasp and remove the plastic cover at the base of the tracks, then use a Phillips screwdriver to remove the two (2) 4mm hex bolts from the bottom of the track (Figure 1.5).
2. Lift the bottom of the track and slide it down and away from the unit.
3. Repeat steps 1 and 2 for each track as necessary.
4. To replace a track cover, position it over the track and slide it up, inserting the pegs on the frame into the holes at the top of the track (Figure 1.6). Lower the bottom end of the track into position and secure it with the three (3) screws.
5. Position the plastic cover at the base of the tracks and snap it into place.

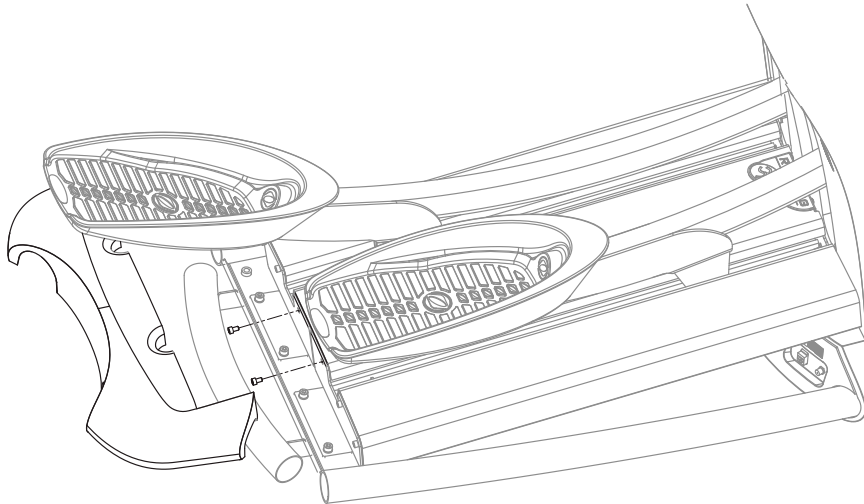


Figure 1.5

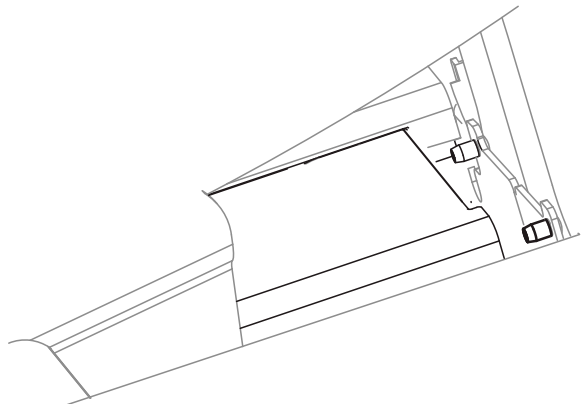


Figure 1.6

1.4 Internal Part Locations

Figure 1.7 highlights the locations of the main components of the PRO4700 linkage system. The following key components are not shown in the picture:

- ❑ **Moving handlebars**
- ❑ **Belt tensioner assembly**, located on the left side of the machine, next to the magnetic brake assembly.

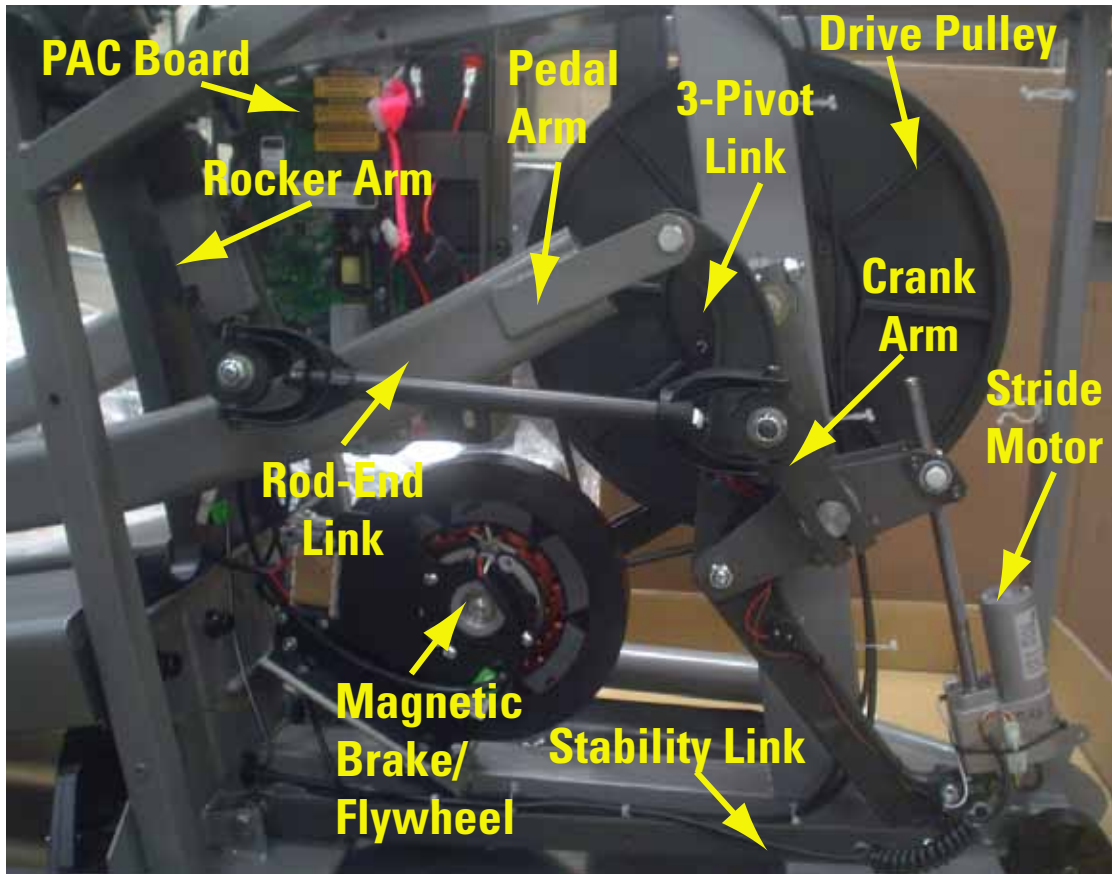


Figure 1.7

1.5 Diagnostic Mode Settings

The PRO4700 elliptical machine offers a diagnostics mode to test the electrical functions. To enter the diagnostics mode, pedal the elliptical, then hold down the Time, Level, and Up Arrow (▲) and Down Arrow (▼) keys simultaneously for three (3) seconds. Several tests and results are displayed in the console windows (shown in Figure 1.6), as indicated in the chart below. Use the Up Arrow (▲) and Down Arrow (▼) keys or the numeric keypad to navigate through the diagnostic tests options. When (ENTER) is displayed along with the Test Name, you must press the ENTER key to begin the test. To exit a test, press PAUSE CLEAR twice, then use Up Arrow (▲), Down Arrow (▼) or the numeric keys to move to the next test. The following diagnostics are available:

Message Center	Description	Matrix	Window 1	Window 2	Window 3	Window 4
MODEL VERSION	Model and Software version information	←	Model #	Version Number VV.00	Media Configuration: 0=None, 1=TV 2=Wireless	
M LOWER BOARD	Model # and Software version of Lower Board	←	Model # of lower board	Processor Version Number		Processor Version Number
DISPLAY (ENTER)	Checks all LEDs. Use the numeric keypad to change the speed of the test (0 is slowest, 9 is fastest). When you have verified all LEDs, press Pause Clear to exit this test.	All LEDs light	All LEDs light	All LEDs light	All LEDs light	All LEDs light
KEYPAD (ENTER); Name of Key	Check all keys. Press each key on the keypad and the stationary handlebars and listen for the beep to verify that each works properly. The Message Center displays the name of the key being pressed. Press Pause Clear to exit the test.	TEST, PASS, or FAIL	Count of unique keys pressed			
BRAKE (ENTER) then BRAKE - TESTING	Brake motor test. Press Pause Clear to exit the test.		Raw brake position	Brake current		
STRIDE (ENTER) then STRIDE - PASS or STRIDE - FAIL	Stride motor test. Press Pause Clear to exit the test.	LEFT INIT RIGHT INIT SEEK	Left stride raw value	Left stride current	Right stride raw value	Right stride current
PORTS (ENTER)	CSAFE Ports; for factory testing only. (Requires a special cable.)	TEST, PASS, or FAIL				
BATTERY VOLTAGE	Battery voltage; displays the current charge level of the battery. Should be 21.0 or greater.	Voltage value	PASS, LOW or FAIL	Chr or (blank)	Aux Power Supply Voltage	Generator Supply Voltage
RPM	Revolutions per Minute (RPM)	Speed				

Message Center	Description	Matrix	Window 1	Window 2	Window 3	Window 4
HEART RATE	Heart rate reading test; grasp the contact heart rate sensors (or run test while wearing a heart rate chest strap) to verify that the heart rate monitoring functions are working properly.	Heart Rate (if detected) or _____				
MACHINE HOURS	Total time of machine since last reset. You may also quickly access this data when not in diagnostics mode by pressing and holding the Program, Level, and Up Arrow keys at the same time. To reset machine hours to 0, press and hold the ArmBlaster, X-Mode and Pause Clear keys for 3 seconds.	Number of hours of use since last reset				
MACHINE KILO-REVOLUTIONS	Machine usage since last reset, in thousands of revolutions. Reset machine RPM to 0 using the same key combinations as described above for resetting Machine Hours.	Revolutions value				
L-STRIDE MINUTES	Number of minutes of left stride motor activity since last reset.	Minutes				
R-STRIDE MINUTES	Number of minutes of right stride motor activity since last reset.	Minutes				

To exit the diagnostics mode at any time, press the Pause Clear button twice within 2 seconds.



Standard Keypad



Personal Viewing System (PVS) Keypad

Figure 1.8

1.6 Troubleshooting and Error Codes

Follow these steps to diagnose and resolve stride motor errors on the PRO4700:

Step	Action	Yes	No
1	Unplug battery. Pedal machine and press the Pause/Clear button until the console goes blank. Plug the battery back in and pedal. Did the error code come back?	Continue to Step 2.	Message cleared and resolved.
2	Unplug battery. Switch stride cables at plug-in on lower board. Pedal machine. Did the same error code come back?	Replace lower board. Repeat step 1.	Put cables back into original slots on lower board and go to Step 4.
3	Did this clear the error code?	Problem solved.	Put cables back to original slots on lower board and go to Step 4..
4	Unplug battery. Remove stride cables and switch left cable to right motor and right cable to left motor. Plug in battery and pedal machine. Did the original error code return?	Replace stride motor. Repeat step 1. See list of error codes.	Replace stride cable. Repeat step 1. See list of error codes.

List of Errors

20	L-STRIDE ERROR 20	Stride motor is using too much current.
21	L-STRIDE ERROR 21	No feedback from stride motor.
22	L-STRIDE ERROR 22	No feedback from stride motor and low/no motor current.
23	L-STRIDE ERROR 23	Stride motor timed out while decreasing stride length..
26	L-STRIDE ERROR 26	No feedback from stride and high motor current.
27	L-STRIDE ERROR 27	Stride motor timed out while increasing stride length.
28	L-STRIDE ERROR 28	Stride motor sent back too many pulses while decreasing stride length.
29	L-STRIDE ERROR 29	Stride motor sent back too many pulses while increasing stride length.
30	R-STRIDE ERROR 30	Stride motor is using too much current.
31	R-STRIDE ERROR 31	No feedback from stride motor.
32	R-STRIDE ERROR 32	No feedback from stride motor and low/no motor current.
33	R-STRIDE ERROR 33	Stride motor timed out while decreasing stride length.
36	R-STRIDE ERROR 36	No feedback from stride motor and high motor current.
37	R-STRIDE ERROR 37	Stride motor timed out while lengthening stride length.
38	R-STRIDE ERROR 38	Stride motor sent back too many pulses while decreasing stride length.
39	R-STRIDE ERROR 39	Stride motor sent back too many pulses while increasing stride length.

1.7 Console and Keypad Connections

The PRO4700 cables are connected to the console and keypad as indicated by the diagrams in Figure 1.9:

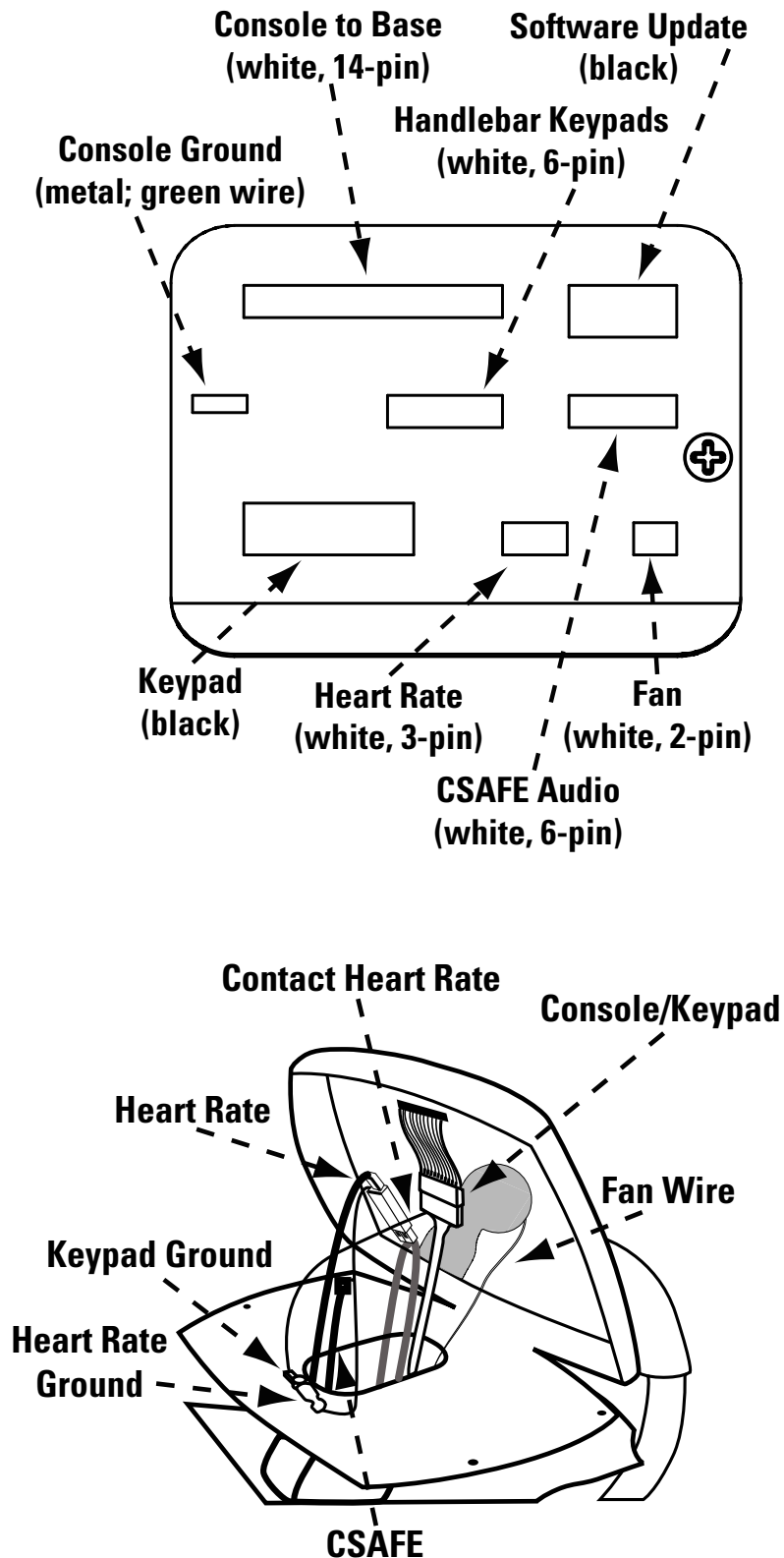


Figure 1.9

1.8 CSAFE and COAX Connections

The PRO4700 is CSAFE protocol compatible and equipped with coaxial cable connections for video. The CSAFE connections are located under the right edge of the keypad and under the right track at the base of the shroud. The COAX connection is next to the CSAFE connection under the right track (Figure 1.10).

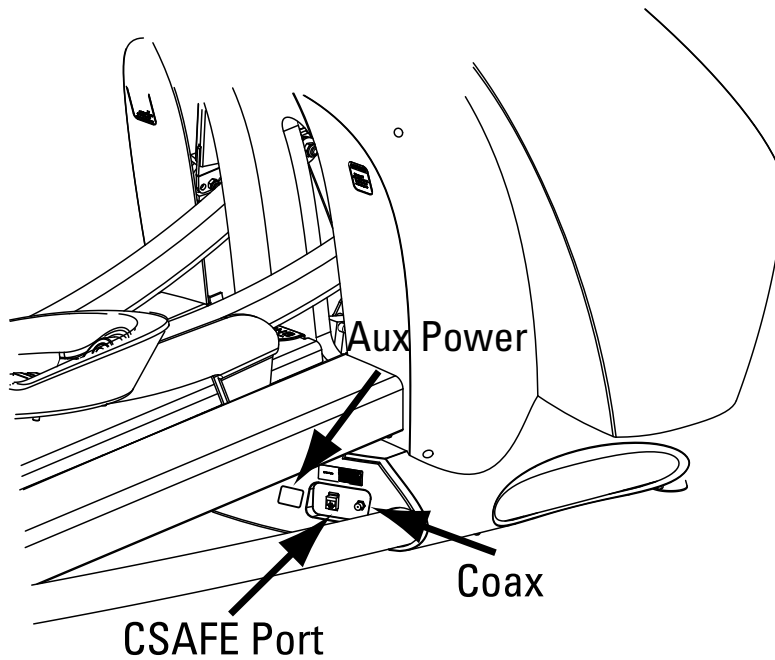


Figure 1.10

An optional LCD Mounting Arm is also available, as is a remote controller mounting bracket. Please refer to the PRO Series LCD Mounting Arm Kit Assembly Instructions for detailed installation instructions for these optional accessories.

1.9 Belt Replacement

1. Remove the top cover and left shroud to access the inside of the unit. Figure 1.11 shows the belt tensioner assembly.
2. Reach inside the unit and disconnect the contact heart rate and program adjustment button cables at the base of the left handlebar.
3. Use a 17mm wrench to remove the bolt securing the 3-pivot link and the left pedal arm. Allow the pedal to slide backwards and rest upon the track.
4. Use a 17mm wrench to remove the bolt securing the stability link and the 3-pivot link.
5. While holding the left handlebar so that it doesn't drop, use a 17mm wrench to remove the nut securing the rod-end link and the left pedal arm. Lower the handlebar to rest on the track.
6. Locate the three (3) hex screws that hold the belt tensioner assembly to the brake assembly. Note the position of each screw by putting a mark on the plate.
7. Use a 13mm wrench to loosen the adjustor nut at the base of the J-hook bolt.
8. Use a 4mm hex wrench to loosen the three hex screws that hold the belt tensioner plate to the frame. Rotate the belt tensioner plate to create slack in the belt.
9. Remove the old belt and replace it with a new one, making sure that the new one is properly threaded around the drive pulley and the tensioner.
10. Rotate the tensioner plate so that each screw is aligned with its mark on the plate. Tighten the three (3) screws.
11. Tighten the adjustor nut at the base of the J-hook bolt.
12. Lift the left handlebar into position; reposition and tighten the rod-end link nut.
13. Insert and tighten the bolt and nut securing the stability link and the 3-pivot link.
14. Lift the left pedal arm; insert and tighten the bolt and nut securing the 3-pivot link and the left pedal arm.
16. Twist the drive belt with your fingers. It should move approximately 45° or less. Test by pedaling the machine. Slippage should not occur between the belt and the pulley while pedaling the unit and when changing direction while pedaling. If the belt is too tight or too loose, loosen the adjustor nut and the hex screws and rotate the plate until the proper tension is found; tighten and test.
17. Replace the left shroud and top cover.

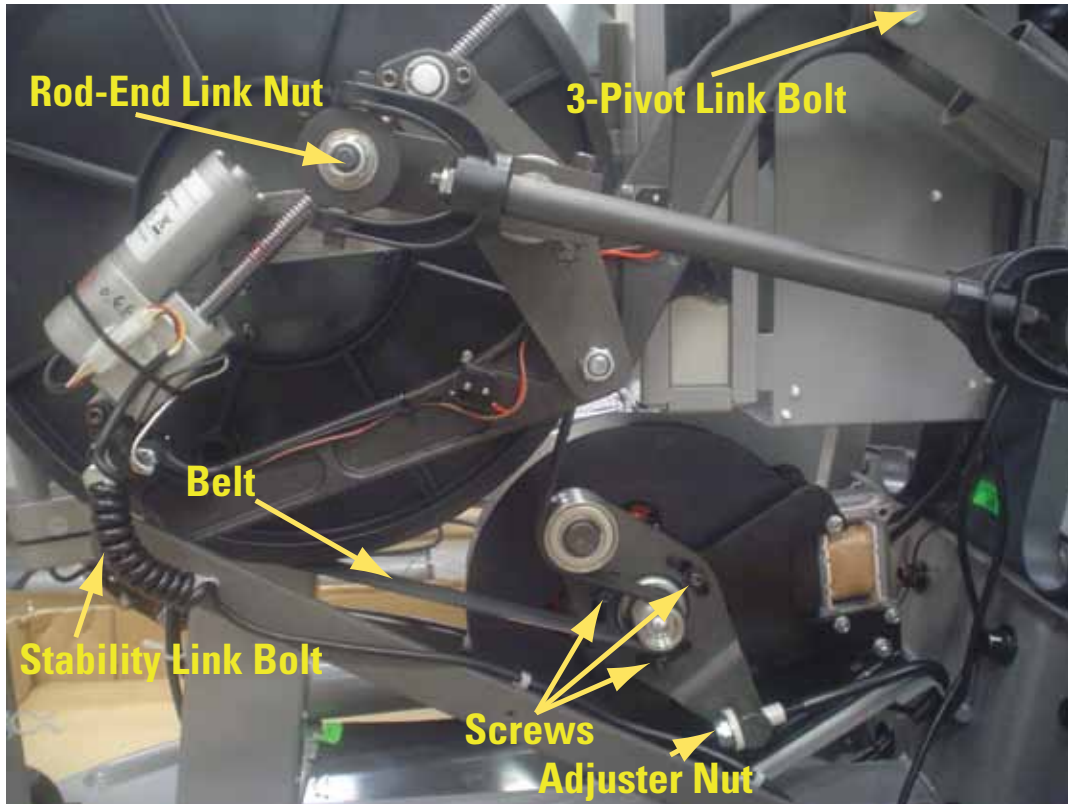


Figure 1.11

1.10 Stride Motor Replacement and Calibration

1. Unplug the unit and remove the shrouds to access the inside of the machine. Refer to Figure 1.12a as you proceed.
2. Unplug the motor from the Smart Drive control board.
3. Unplug the motor from the limit switch connection.
4. Use a 4mm Allen wrench to remove the two (2) socket-head cap screws holding the retainer bracket to the actuator swing arm. Retain the snap rings and washers for reuse if they are not damaged.
5. Use a 4mm Allen wrench to remove the socket-head cap screw holding the stride motor to the clevis bracket and the 3-pivot link pivot link.
6. Remove the stride motor and actuator nut assembly, retaining the actuator motor mounting sleeve. Leave the cable in place for now; you will use it as a guide for routing the new motor's cable.
7. Thread the actuator nut up and off of the threaded shaft, retaining it for reuse if it is not damaged.
8. Install a new or reused actuator nut onto the threaded shaft of the new stride motor.
9. Position the new stride motor in the clevis bracket, insert the socket-head cap screw, and tighten with the 4mm Allen wrench.
10. Position the actuator nut in the actuator swing arm. Position the actuator nut retaining brackets, along with the snap rings and washers, and insert the two (2) socket-head cap screws. Tighten with the 4mm Allen wrench.
11. Plug the stride motor into its labeled plug on the Smart Drive control board. Position the stride motor cable next to the old motor cable, securing it with zip-ties. Cut the old zip-ties and remove the old motor from the machine.
12. Plug the stride motor into its connection with the limit switch assembly.
13. Repeat steps 2-12 for the other stride motor if necessary.
14. Verify that both stride motor actuator nuts are in the same relative position on the shaft—top or bottom position (Figure 1.12b). If they are properly aligned, turn on the unit, and test for proper functioning.

If the actuator nuts are not properly aligned (that is, one is at the top position and one at the bottom), the following steps may need to be taken to recalibrate the stride motors and prevent an error message from occurring:

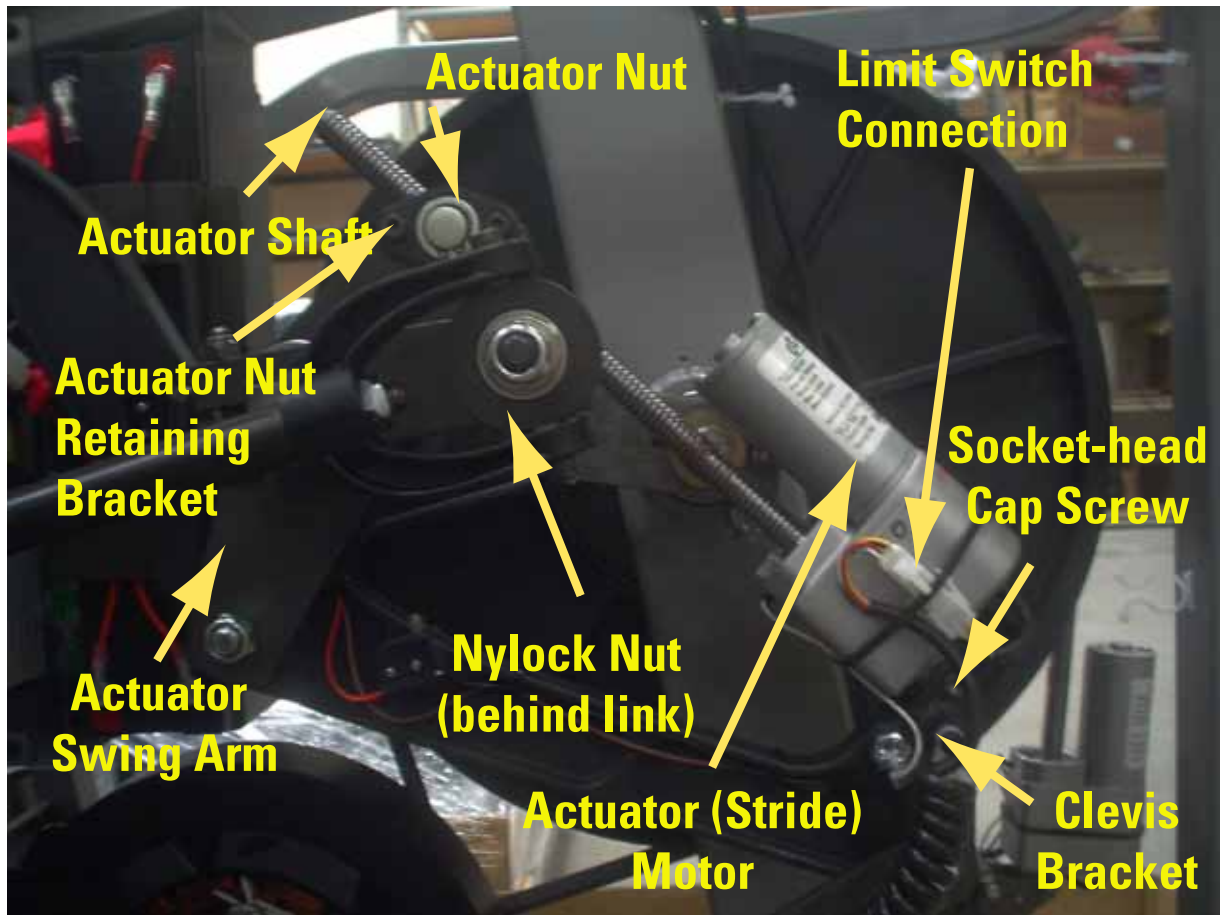
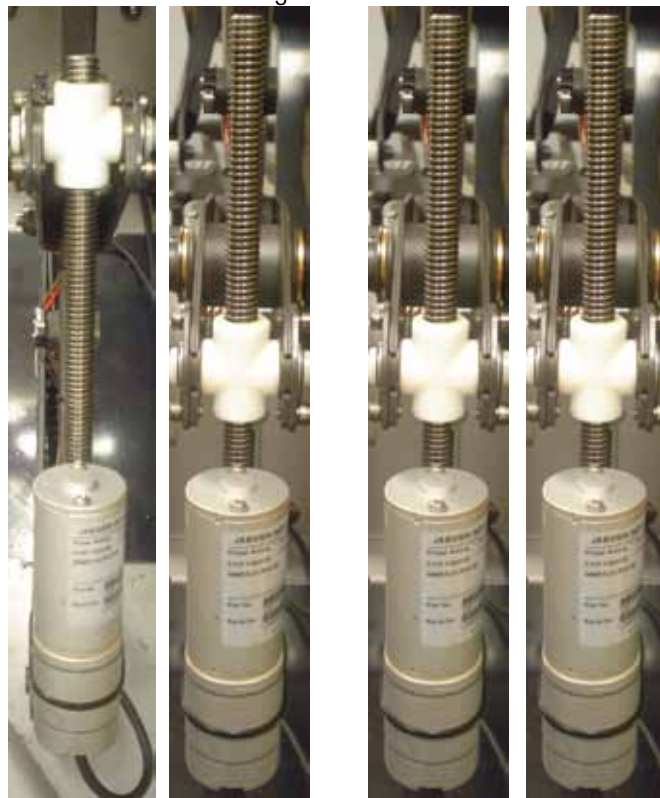


Figure 1.12a



Incorrect alignment (not calibrated) Figure 1.12b *Correct alignment (calibrated)*

1.11 3-Pivot Link Replacement

1. Unplug the unit and remove the shrouds to access the inside. Follow the directions below for each side of the machine (left and right 3-pivot links). Figure 1.13 identifies the links and bolts.
2. Use two 17mm wrenches to remove the bolt and nut that attach the pedal arm to the 3-pivot link and lower the pedal arm. Inspect the snap rings, washers, wave washer, and sleeve, replacing any of these parts that are worn or damaged and retaining the rest to use with the new 3-pivot link.
3. Use a 17mm wrench to remove the center bolt connecting the 3-pivot link to the actuator swing arm.
4. Use a 13mm wrench to remove the two (2) nuts and clevis bolts securing the stride motor assembly to the 3-pivot link. Disconnect the limit switch assembly from its connection at the base of the stride motor assembly, then swing the stride motor assembly up and away from the 3-pivot link.
5. Use snap ring pliers to remove the retaining ring that attaches the stability link to the 3-pivot link stud, and remove the 3-pivot link.
6. Attach a limit switch assembly (either new or reused from the old 3-pivot link) to the new 3-pivot link, according to the directions found in Section III this manual.
7. Position the new 3-pivot link. Make sure that the end of the 3-pivot link that is rounded is attached to the pedal arm and that the stud at the bottom of the 3-pivot link points toward the inside of the machine.
8. Re-install the retaining ring that attaches the stability link to the 3-pivot link stud.
9. Swing the stride motor assembly back down into position, inserting the 3-pivot link between the clevis brackets and securing it with the two (2) bolts and nuts.
10. Connect the limit switch assembly to its connection at the base of the stride motor assembly.
11. Position the actuator swing arm to the center pivot of the 3-pivot link and re-insert the center bolt.
12. Lift the pedal arm into position. Insert the sleeve into the 3-pivot link, place the snap rings, washers, and wave washer into their proper positions (Figure 3.6), and re-insert the bolt that attaches the pedal arm to the 3-pivot link. Secure with the nut and tighten with two 17mm wrenches.
13. Tighten all the connections.
14. Use the pedal arms to move the machine through its motion forward and backward several times to test.

1.12 Arm Adjustment

Follow these steps to adjust the moving handlebars if there is side-to-side looseness or wobble:

1. Remove the top cover and the side shroud.
2. Refer to Figure 1.14. While grasping the moving handlebar and wiggling it side-to-side, use a 13mm open-end wrench to tighten the arm adjuster nut on the forward end of the rod-end link until you no longer feel the wobble in the arm.
3. Repeat the adjustment on the opposite handlebar if required.
4. Pedal the unit a few times to test; adjust as needed.
5. Replace the side shroud and top cover.

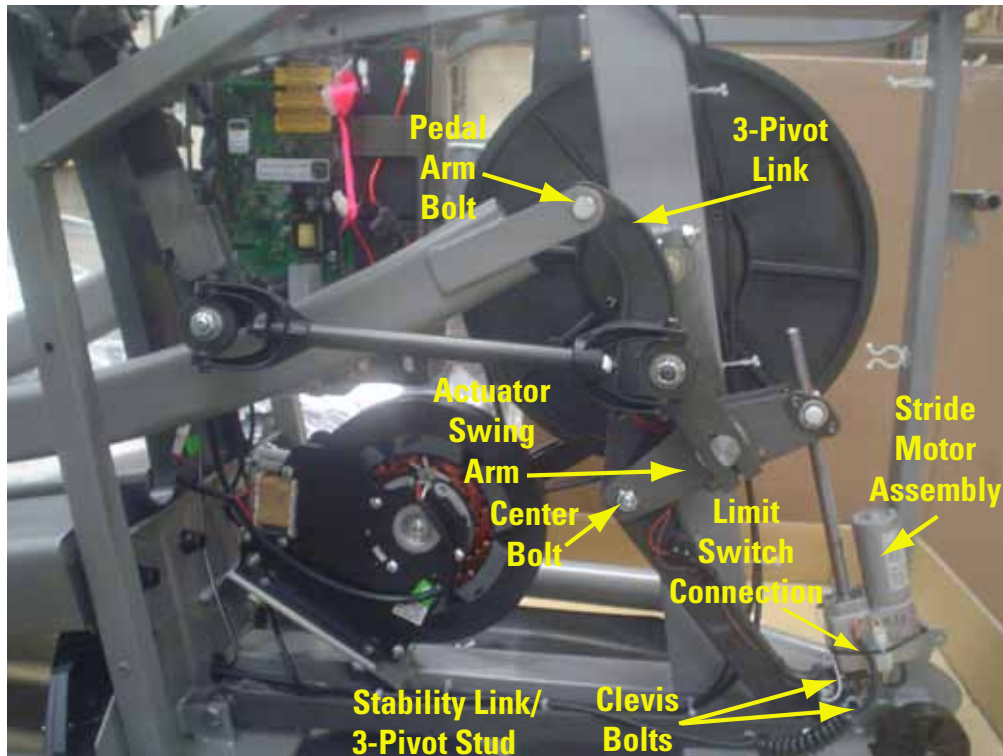


Figure 1.13



Figure 1.14

1.13 Contact Heart Rate Troubleshooting/Handlebar Replacement

The PRO4700 features contact heart rate sensors on the moving handlebars. Follow these steps to troubleshoot issues with the contact heart rate grips and to replace the moving handlebars if necessary.

To troubleshoot the contact heart rate grips:

1. Grasp the grips firmly with the sensor resting against the palm of the hand. Keep your hands kept steady and in place.
2. Have a different user test the grips; some individuals have a body composition that is not conducive to heart rate monitoring.
3. Unplug and re-connect the contact heart rate cable at the base of the handlebar; listen for a click to ensure good connection.
4. Remove the keypad; then unplug and re-connect the contact heart rate cable at the heart rate board; listen for a click to ensure good connection.
5. Wear a wireless heart rate transmitter and verify that a heart rate reading is detected. If not, the heart rate board (located under the keypad) must be replaced.
6. If feasible, use a meter to test conductivity between the contact grips and the base of the moving handlebar, and between the contact grips and the heart rate board. This will help you to isolate the location of the fault in the wiring, in the heart rate board, or in the grips themselves.

To replace faulty contact heart rate grips, follow these steps to replace the moving handlebar. Right and left handlebars are different; be sure you have the correct one.

1. Remove the top cover, and remove the handlebar cover from the handlebar pivot point by pulling it gently away from the machine.
2. Disconnect the heart rate and adjustment button cables from their connections at the base of the handlebar (Figure 1.15).
3. Use a hex wrench to remove the four (4) 6mm hex key bolts and remove the handlebar (Figure 1.15).
4. Slide the new handlebar into position, then insert and tighten the four (4) 6mm hex key bolts. **Make sure these bolts are very tight.**
5. Re-connect the contact heart rate and adjustment button cables to their connections on the frame. Listen for clicks to ensure good connections.
6. Gently pull the handlebar wires through the white cable tie at the bottom of the handlebar tube to remove any slack from within the handlebar.
7. Repeat for the other handlebar, if needed.
8. Move the handlebars forward and backward a few times; they should feel tight with no side-to-side motion.
9. Replace the top cover; position the handlebar cover over the handlebar pivot point and press it firmly onto the machine.

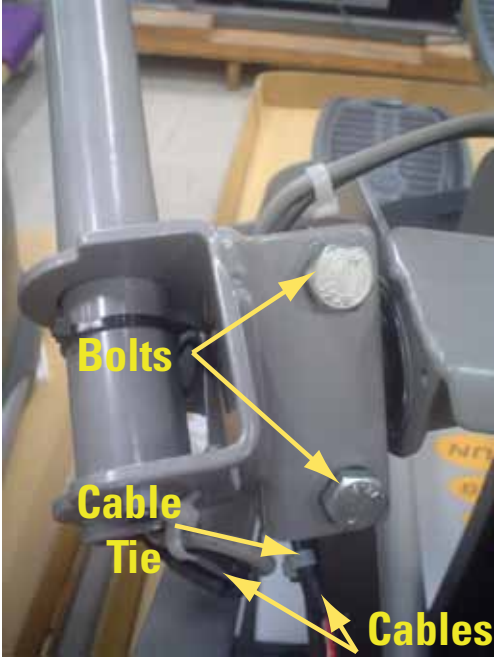
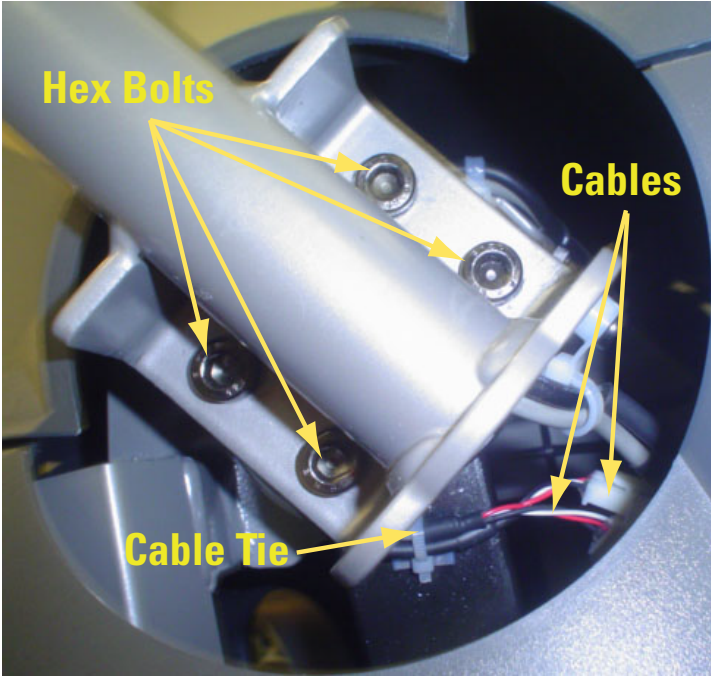
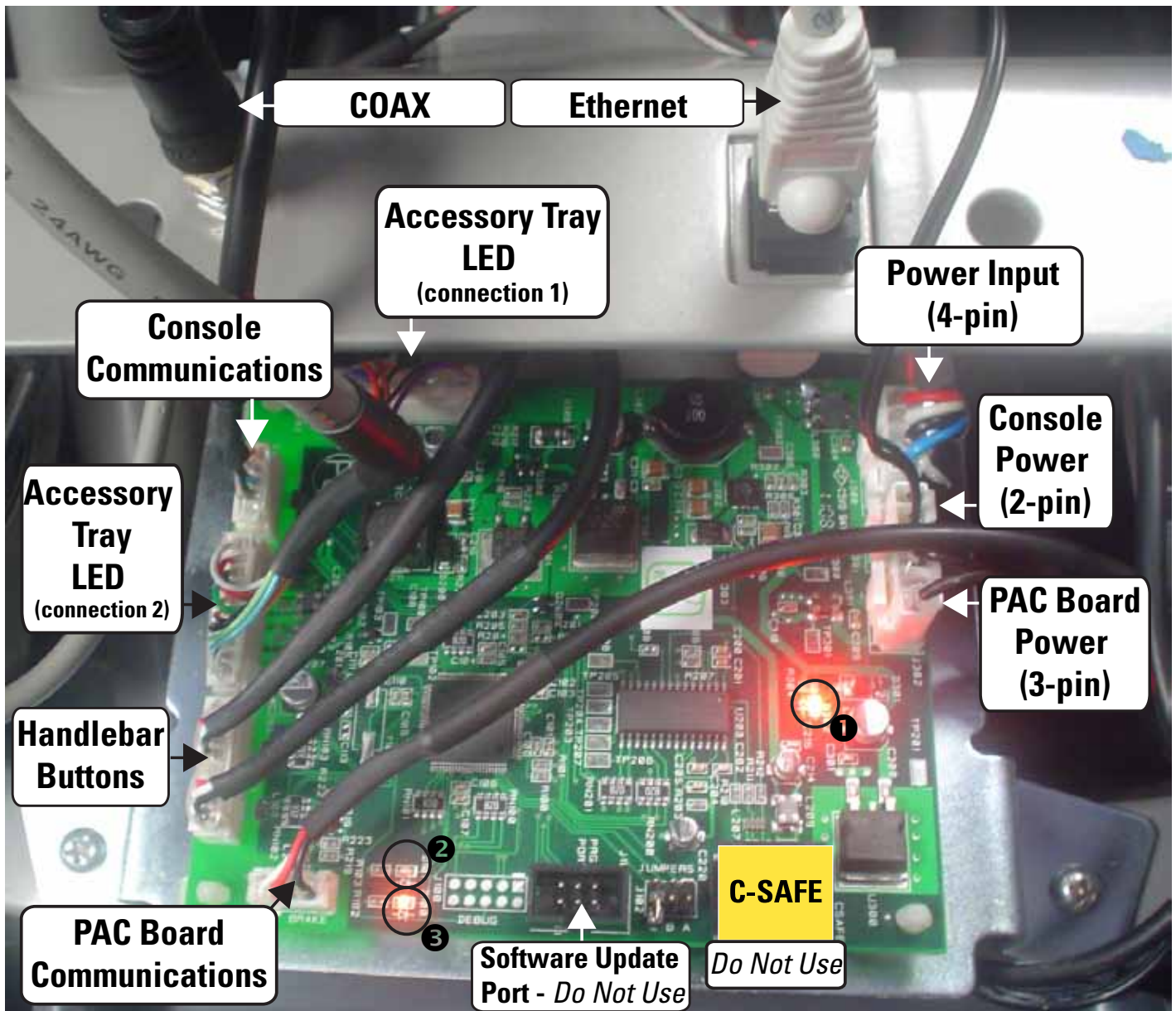


Figure 1.15

1.14 Diagnosis: PRO4700 Touch Middle Board

The PRO4700 Touch includes a middle board where connections are made and LEDs indicate status. Refer to Figure 1.16 for identification of connections to be checked. Also refer to the Touch Console Service Guide for diagnostics and service tasks for the Touch Console.



LED ①: Red - Power Input OK

LED ②: Flashing Green when pedaling - Communicating with Console

LED ③: Flashing Yellow when pedaling - Communicating with PAC Board

Figure 1.16

For additional information, refer to supporting documentation:

PRO4700 Assembly Instructions

PRO4700 Operations Manual

Touch Console Operations Manual

Touch Console Service Guide

PRO4700 Touch Assembly Instructions

PRO Series LCD Mounting Arm Kit Assembly Instructions

PRO4500 Service Manual

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