



# **Nautilus**

## **NR 3000**

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NOTE: This document is a service manual only. For parts listings please consult the appropriate Exploded Parts drawing



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## ***ELECTRONIC TROUBLESHOOTING***

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**NOTE:** The bike must be pedaled at greater than 45 RPM while performing the following tests.

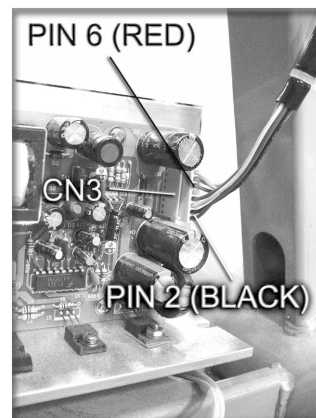
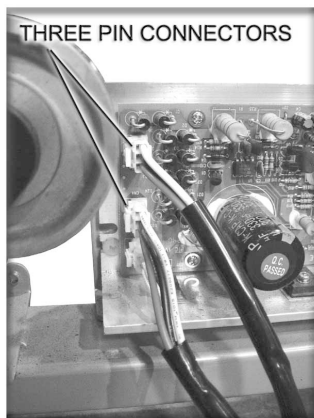
**1. PROBLEM:** The computer will not power up.

**SOLUTION:** a. Remove the computer and disconnect the nine pin connector from the back of the computer. Using a multimeter\* set to check DC voltage, check the voltage From pin 2 (black wire) and pin 6 (red wire) for 5+ volts DC. If the voltage is correct, replace the computer. If the voltage is incorrect, See step b.

b. Using a multimeter, Check the voltage output at the lower board on pin 2 and pin 6 at connector CN3 for 5+ volts DC. If the voltage is correct, see step c. If the voltage is incorrect, see step d.

c. Make sure all of the wire connections between the lower board and the computer are secure. If the connections are secure, use a multimeter\* set to read OHMS to check each wire for continuity. If all of the previous checks have been made, you should find a bad wire at this point. Replace the bad wire.

d. Disconnect one of the three pin connectors from the alternator/brake and use a multimeter, set to check AC voltage, to check the red and black wires for 30+ volts AC. If the voltage is incorrect, replace the brake. If the voltage is correct, check the connections and continuity of the wires from the brake to the lower board. Replace any bad wires or loose connections. If the wires and connections are good, replace the lower board.



\* SEE "HOW TO USE A MULTIMETER" IN GENERAL INFORMATION SECTION.

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## ***ELECTRONIC TROUBLESHOOTING***

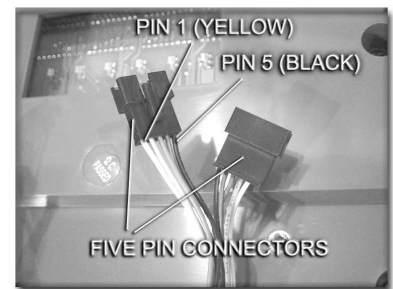
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**NOTE:** The bike must be pedaled at greater than 45 RPM while performing the following tests.

### **2. PROBLEM:** No contact heart rate reading.

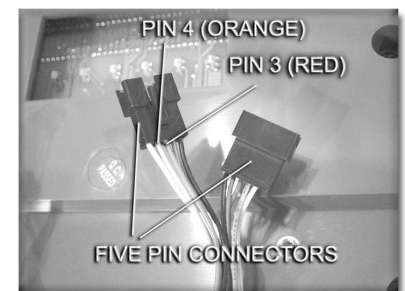
- SOLUTION:**
- Grasp the contact grips and see if the heart rate light starts blinking. If the light does not blink, check the two five-pin connectors on the back of the computer. If the connections are intact, see step b.
  - Disconnect the both of the five-pin connectors from the back of the computer and use a multimeter\* set to read resistance (OHMS) to measure continuity from the pins to the metal plates on the handgrips. Pins 1 & 5 of each connector should have a Black wire and a Yellow wire that correspond to only one side (left or right) of the bike. To check for continuity or short circuits, you will need to place a lead on pin 1 (Black wire) and the other lead on one of the metal handgrip plates. Check each metal plate for a reading. Only one plate should have a reading of less than three OHMS. If more than one plate has a reading of less than three OHMS, you have a short circuit (wires are touching each other or the handle bar). If you have a reading of infinite (open) on all of the metal plates, then you have a broken wire or loose connection. Remove the shrouds and locate the bad wire or loose connection and replace it. Repeat this test for each pin. If all of the wires and connections are ok, replace the computer.



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### **3. PROBLEM:** The buttons on the handgrips do not work.

- SOLUTION:**
- Disconnect the two five-pin connectors from the back of the computer and use a multimeter\* set to read OHMS to check the wires for continuity. Place the red lead on pin 3 (red wire) and the black lead on pin 4 (orange wire) and press the lower button on one of the handgrips. If you do not get a reading, check the lower button on the other handgrip. If neither button gives a reading, you have a broken wire, loose connection or defective handgrip. Remove the shrouds and locate the bad wire or loose connection and replace it. If no bad wires or loose connections can be found, replace the entire handgrip.  
If the continuity test shows the buttons to be functional, replace the computer.



\* SEE "HOW TO USE A MULTIMETER" IN GENERAL INFORMATION SECTION.

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***ELECTRONIC TROUBLESHOOTING***

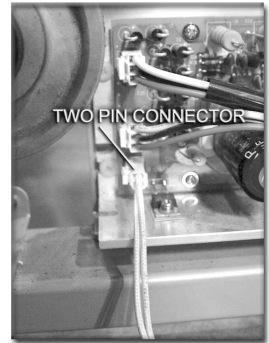
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**NOTE:** The bike must be pedaled at greater than 45 RPM while performing the following tests.

**4. PROBLEM:** Computer works but the bike has erratic or incorrect resistance.

- SOLUTION:**
- a. Make sure all of the wires are in good condition and all of the connectors are secure.
  - b. Disconnect the two pin connector from the lower board and use a multimeter\* set to read OHMS to check the Load Resistors for proper function. Measure the resistance across the two pin connector. It should measure 10 OHMS +/- 2 OHMS. If the reading is correct , replace the lower board. If the reading is incorrect, replace the Load Resistors



\* SEE "HOW TO USE A MULTIMETER" IN GENERAL INFORMATION SECTION.

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## MECHANICAL TROUBLESHOOTING

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**1. PROBLEM:** Belt slipping, too tight or makes noise

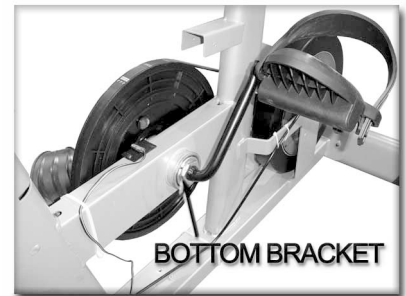
**SOLUTION:** a. Make sure the spring on the belt tensioner is in place and functional. If tensioner is working properly, replace the belt.



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**2. PROBLEM:** Bottom bracket feels tight, rough or makes noise

**SOLUTION:** a. Adjust the bottom bracket\*.  
b. If the bottom bracket still feels rough or tight after adjustment, replace the bottom bracket.



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**3. PROBLEM:** Bottom bracket feels loose

**SOLUTION:** a. Make sure the bearing cups are secure in the frame.  
b. Adjust the bottom bracket\*.

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**4. PROBLEM:** Drive train noise

**SOLUTION:** a. Noise once per revolution: check bottom bracket or pedals.  
b. Noise once every 1.5 revolutions: check belt

Noise multiple times per revolution: Check tension pulley, belt or flywheel hub.

**FOR MORE DETAILED INFORMATION CONTACT  
TECHNICAL SUPPORT AT 1-800-864-1270**

\* SEE "HOW TO ADJUST A ONE PIECE BOTTOM BRACKET" IN GENERAL INFORMATION SECTION.

| CONNECTION |     |
|------------|-----|
| A-B        | M-N |
| C-D        | O-P |
| E-F        | Q-R |
| G-H        | S-T |
| I-J        | U-V |
| K-L        | Y-Z |

|          |        |
|----------|--------|
| 1        | 8      |
| 00000000 | 000000 |
| A        |        |
| 1        | 2      |
| 3        | 4      |
| 5        | 6      |
| 7        | 8      |
| 9        | 0      |

| NO | COLOR  | FUNCTION |
|----|--------|----------|
| 1  | BROWN  | +5VDC    |
| 2  | ORANGE | GN       |
| 3  | RED    | +5V      |
| 4  | BLUE   | +        |
| 5  | YELLOW | RP       |
| 6  | BLACK  | GN       |
| 7  | YELLOW | RP       |
| 8  | BLACK  | GN       |
| 9  | BROWN  | +5V      |

|   |   |
|---|---|
| 1 | 2 |
| 3 | 4 |
| 5 | 6 |
| 7 | 8 |
| 9 | 0 |
| Y |   |
| 1 | 2 |
| 3 | 4 |
| 5 | 6 |
| 7 | 8 |
| 9 | 0 |

| NO | COLOR | FUNCTION |
|----|-------|----------|
| 1  | RED   | +        |
| 2  | BLACK | GN       |
| 3  | WHITE | +        |
| 4  | WHITE | +        |
| 5  | WHITE | +        |

|   |   |
|---|---|
| 1 | 2 |
| 3 | 4 |
| 5 | 6 |
| 7 | 8 |
| 9 | 0 |
| H |   |
| 1 | 2 |
| 3 | 4 |
| 5 | 6 |
| 7 | 8 |
| 9 | 0 |

| NO | COLOR  | FUNCTION |
|----|--------|----------|
| 1  | YELLOW | HR       |
| 2  | ORANGE | ENTER    |
| 3  | RED    | COM      |
| 4  | BROWN  | START    |
| 5  | BLACK  | HR       |

|   |   |
|---|---|
| 1 | 2 |
| 3 | 4 |
| 5 | 6 |
| 7 | 8 |
| 9 | 0 |
| X |   |
| 1 | 2 |
| 3 | 4 |
| 5 | 6 |
| 7 | 8 |
| 9 | 0 |

# NR-3000

|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| 0 | 1 | 2 |
| J |   |   |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| 0 | 1 | 2 |

|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| 0 | 1 | 2 |
| F |   |   |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| 0 | 1 | 2 |

|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| 0 | 1 | 2 |
| K |   |   |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| 0 | 1 | 2 |

|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| 0 | 1 | 2 |
| Q |   |   |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| 0 | 1 | 2 |

