



5100, E916 and EV916 ELLIPTICAL

ELECTRICAL TROUBLESHOOTING

1. Problem: Console will not power up.

Solution:

- a.** Plug in recharger (supplied with machine) and retest.
 - If the console powers up leave on charge overnight then disconnect recharger next day and retest.
 - If the console does not power up, is flickering or is tripping out, go to step **b**.
- b.** Remove the console and disconnect the CHR/Remote operating control cables from the console.

If the console powers up then one of the CHR or remote operating control cables is pinched or is grounding out and should be replaced.

If the console does not power up, go to step **c**.
- c. Test the main cable for correct DC voltage**

Disconnect the main cable from the console.

Using a multimeter, check the voltage on PIN 1 (black) and PIN 10 (white) on the main cable connector and verify a minimum of 6.0 VDC while cycling the machine.

If the voltage is good, replace the console.

If there is no voltage, go to step **d**.

If the voltage is below 6.0 VDC, skip to step **g**. and follow steps from there.
- d.** Check that the inductive switch (speed sensor) is adjusted to within 1/32" (0.8cm) of the speed sensor disc.

If the inductive switch is not adjusted correctly, move the sensor by hand to reach the correct distance.

If the inductive switch is aligned correctly, go to step **e**.
- e. Test the inductive switch**

Unplug the inductive switch cable connector from the PCB and verify AC voltage increases while cycling the machine.

If the voltage does not increase, replace inductive switch.

If the voltage does increase, go to step **f**.

f. Test the output AC voltage from the PCB

Plug the inductive switch back into the PCB and verify that the AC Voltage at yellow test points 10 (negative) and 12 (positive) on the PCB increases when the RPM is increased, (see picture 1 below).

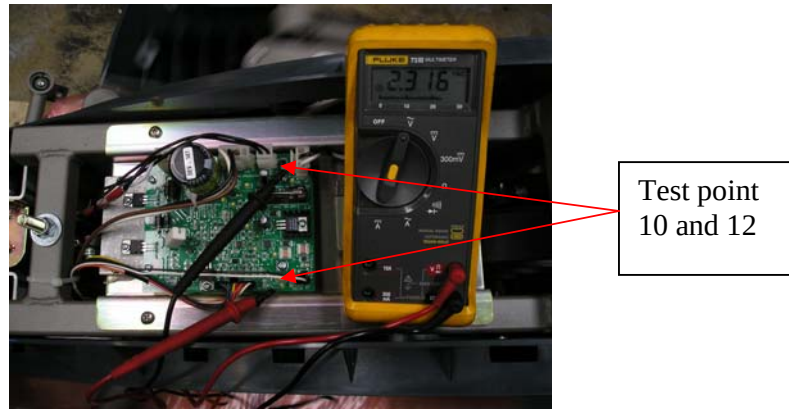
If the voltage does not increase, unplug the main cable from J3 on the PCB and retry.

If the voltage does not increase, replace the PCB.

If the voltage does increase, check continuity of the main cable.

If the voltage does increase with the main cable connected, go to step **g**.

Picture 1



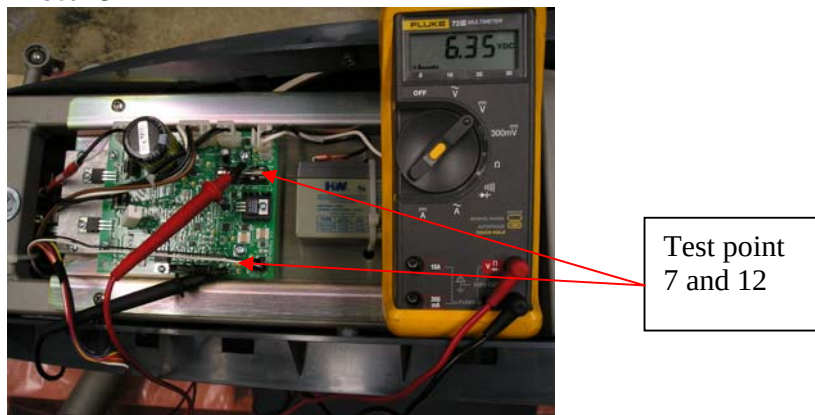
g. Test the output DC voltage from the PCB

Disconnect the main cable connector from the PCB and verify a minimum of 6.0 VDC at yellow test points TP7 (positive) and TP12 (negative) on the PCB, (see picture 2 below).

If the voltage is below 6.0 VDC, go to step **h**.

If the voltage is good, go to step **i**.

Picture 2



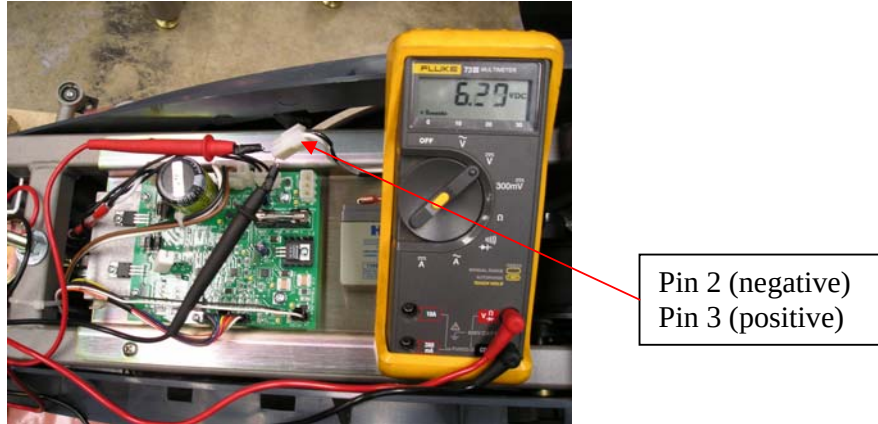
h. Test battery (set multimeter to VDC setting)

Remove the battery cable connector from the PCB and verify a minimum of 6.0 VDC on PIN 2 (black) and PIN 3 (white), (see picture 3 below).

If the voltage is below 6.0 VDC, replace battery.

If the voltage is above 6.0 VDC, replace PCB.

Picture 3



i. Test main cable (use this procedure to check for broken or crossed wires).

Adjust multimeter to Audible setting and check the main cable assembly for correct continuity (no "open circuits") and crosscheck each wire in the cable to check for "shorted wires".

2. Problem: Console powers up but there is no resistance.

Solution:

- a.** Remove the console and check the main cable connector has no backed out pins.
If the connector or cable is damaged then replace the console to inline cable.
If the cable is ok, go to step **b**.

- b.** Swap console with a known good console
If problem persists, go to step **c**.

c. Test the load resistor

Remove the black Drive Train cover by removing the 8 fixing screws then remove the load resistor connector from the PCB and check the resistance at Pin 1 and 2 by setting your multimeter to Ohms.

If you get a reading of 0.7 Ohms, go to step **d**.

If there is no reading, then replace load resistor.

d. Test the alternator

Perform a “positive output to field” test by removing the B+ (white wire) and the field (brown wire) from the alternator and jump the two spade connections on the alternator using a suitable jumper cable, then exercise on the machine for approx 10-15 seconds. If full resistance is achieved then the alternator is working ok, go to step **e**.

If there is no resistance, then either the alternator or the alternator brushes are defective. Before changing the alternator remove the alternator brushes and inspect for wear or damage. If the brushes are defective, replace brushes and repeat the “positive output to field” test.

If the brushes are not defective, replace alternator.

e. Test the diode

Remove the diode from the field connector on the alternator, and then select diode setting on your multimeter and place probes on either side of the diode, touching the wire. You should get a reading of approx .5 volts, now reverse the probes you should get an overload (O.L) reading.

If the diode is good, go to step **f**.

If the diode is defective, replace diode.

f. Test the main cable

If you have a new cable, route the cable on the outside of the machine from the PCB to the console.

If correct resistance is achieved, replace either the upper or lower main cable or both if necessary.

If you don't have a main cable then perform a continuity test by adjusting your multimeter to audible setting and cross check each wire in the cable.

If there is still no resistance after completing all the above tests, replace PCB.

Reminder!

For intermittent problems always check all connection and cables for damage, a wire that is pinched or is grounding out against the frame can cause various issues.

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