

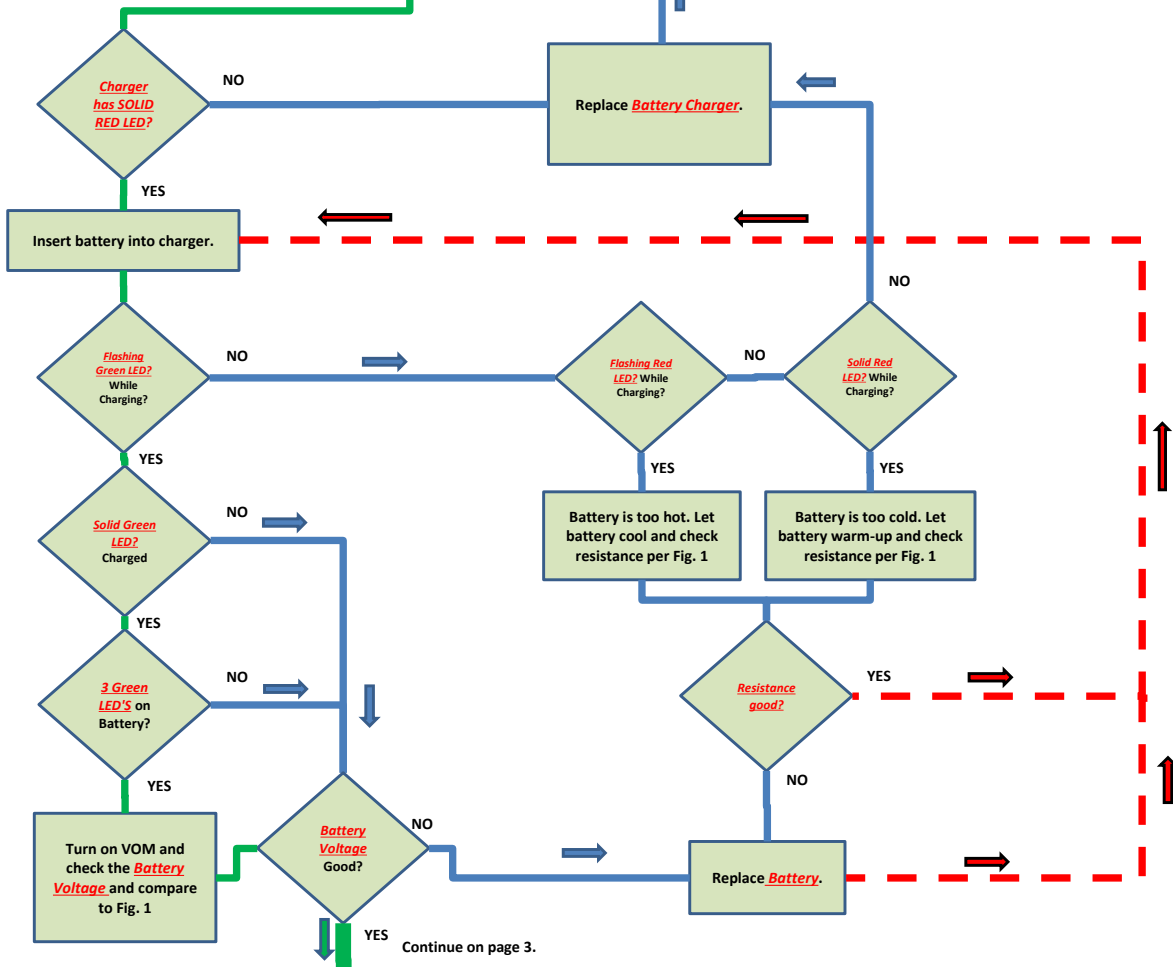
ION Troubleshooting Guide

Using a Multimeter



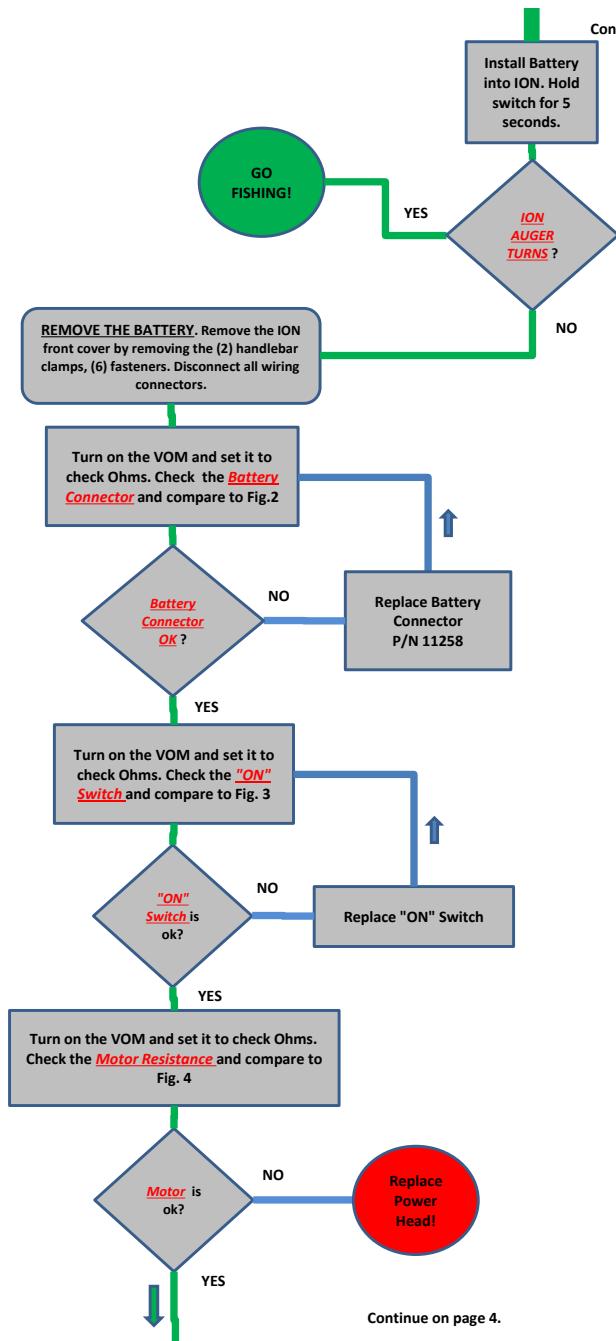
ION Auger Won't Turn

Before inserting the battery to the charger, connect the charger to a functional standard 110 or 240- volt outlet.



KEY	
	Preparation
	Action
	Decision
	Conclusion
GREEN:	BATTERY & CHARGER
GREY:	POWERHEAD
RED:	COMPONENT TEST

Continued from page 2.



Component Test	Battery Installed?	VOM Setting	Wire Codes	Specifications	Where to Test
Battery Voltage	NO	DC Volts	(+) to (-)	35.0 - 42.0	Across Battery Terminals (+) to (-)
Battery Resistance	NO	Ohms	(-) to (A)	5000 - 21000	Across Battery Terminals (-) to (A)

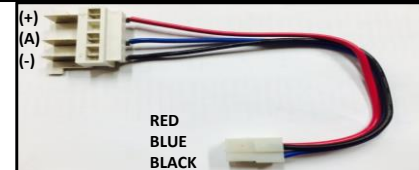
FIGURE 1

BATTERY TERMINALS



Component Test	Battery Installed?	VOM Setting	Wire Codes	Specifications	Where to Test
Battery Connector Ω	NO	Ohms	(-) to Black	0.1 - 1.0	From terminals on battery connector to unplugged harness end.
Battery Connector Ω	NO	Ohms	(+) to Red	0.1 - 1.0	From terminals on battery connector to unplugged harness end.
Battery Connector Ω	NO	Ohms	(A) to Blue	0.1 - 1.0	From terminals on battery connector to unplugged harness end.

FIGURE 2



Component Test	Battery Installed?	VOM Setting	Wire Codes	Specifications	Where to Test
"ON" Switch Ω	NO	Ohms	Orange - Orange	0.1 - 1.0	Remove Battery, remove ON switch from handlebar and unplug wires, measure resistance while depressing switch.
"Reverse" Switch Ω	NO	Ohms	White - White	0.1 - 1.0	Remove Battery, remove REVERSE switch from handlebar and unplug wires, measure resistance while depressing switch.

FIGURE 3

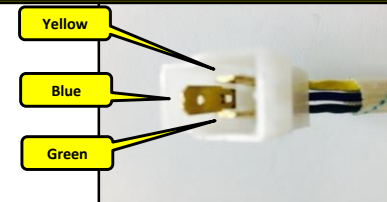
Pierce through insulation on both Orange wires to check "ON" Switch.

Pierce through insulation on both White wires to check "Reverse" Switch.

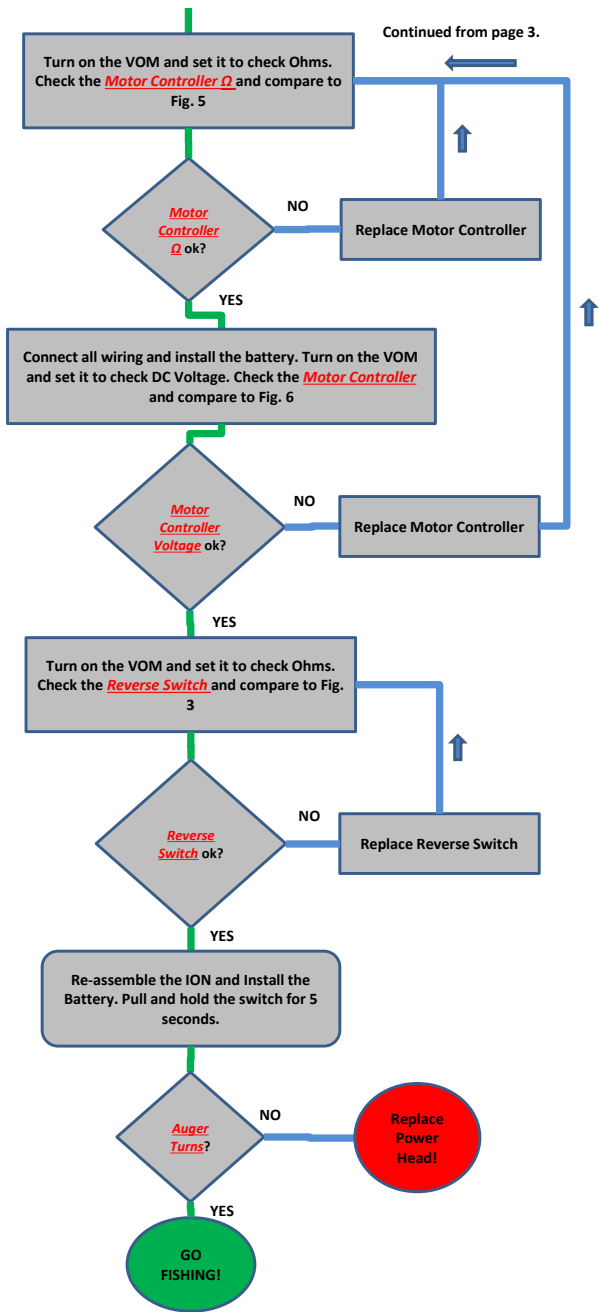


Component Test	Battery Installed?	VOM Setting	Wire Codes	Specifications	Where to Test
Motor Ω	NO	Ohms	Blue - Green	0.2 - 0.4	From unplugged motor harness connector.
Motor Ω	NO	Ohms	Green - Yellow	0.2 - 0.4	From unplugged motor harness connector.
Motor Ω	NO	Ohms	Yellow - Blue	0.2 - 0.4	From unplugged motor harness connector.

FIGURE 4



Continue on page 4.



Component Test	Battery Installed?	VOM Setting	Wire Codes	Specifications	Where to Test
Motor Controller Ω	NO	Ohms	Blue - Black	8500-9500	Across both unplugged Motor Controll harness connectors.
Motor Controller Ω	NO	Ohms	Green - Black	8500-9500	Across both unplugged Motor Controll harness connectors.
Motor Controller Ω	NO	Ohms	Yellow - Black	8500-9500	Across both unplugged Motor Controll harness connectors.

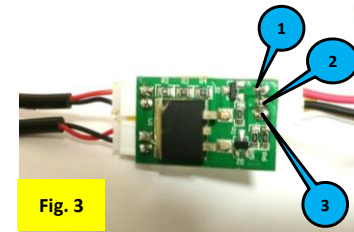
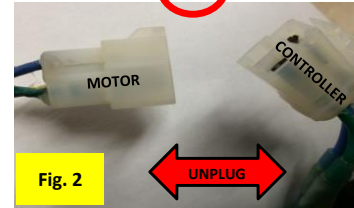
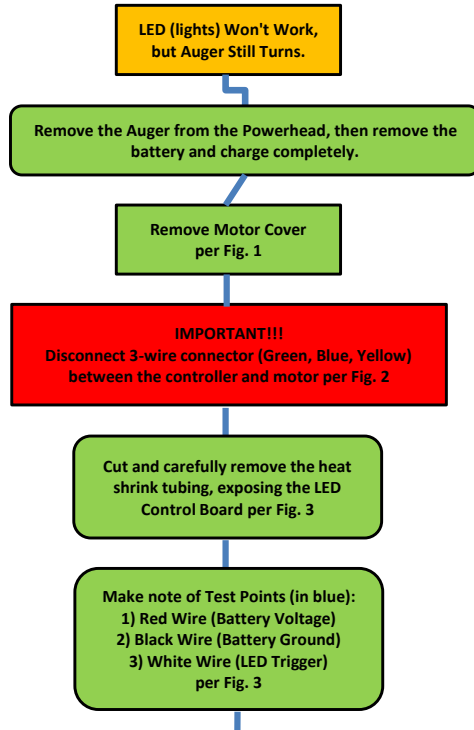
FIGURE 5

Component Test	Battery Installed?	VOM Setting	Wire Codes	Specifications	Where to Test
Motor Controller VDC (Spike)	Yes	DC Volts	Green - Black	27.0 - 33.0	Connect battery harness to Motor Controller only, install battery. Measure across Black lead and unplugged green lead while depressing "ON" switch. Spike will occur for approx 1 second, then reduce voltage.
Motor Controller VDC (Continuous)	Yes	DC Volts	Green - Black	10.1 - 12.1	Connect battery harness to Motor Controller only, install battery. Measure across Black lead and unplugged green lead while depressing "ON" switch. After Spike, measure continuous voltage.

Measure DCV with Controller connected to the Battery Connector, the Battery Installed, and the "ON" switch depressed. Insert the Black Lead from the Multimeter into the Black wire here.

FIGURE 6

ION LED TROUBLESHOOTING GUIDE



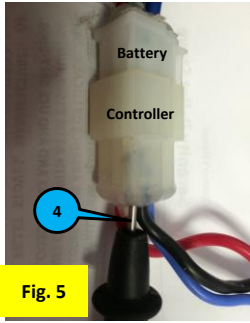
Turn on VOM and set to Ohms per Fig. 4
Install Black (-) test lead into 3-wire connector between the battery and controller, making sure to make contact with the metal terminal inside per Fig. 5

TEST 1
Carefully touch the Red (+) Test lead of the VOM to the Test Point #2 (per Fig. 3) and compare the Ohms reading with that in Fig. 8

Install the battery and set the VOM to DC Volts as per Fig. 6

TEST 2
Carefully touch the Red (+) Test lead of the VOM to the Test Point #1 (per Fig. 3) and compare the VOLTS reading with that in Fig. 8

Temporarily install a Zip Tie around the "On" switch and safety trigger per Fig. 7



TEST 3
 Carefully touch the Red (+) Test lead of the VOM to the Test Point #3 (per Fig. 3) and compare the VOLTS reading with that in Fig. 8

Fig. 8

TEST	TEST POINTS	OHMS	DC VOLTS	RESULT
1	4 2	0-2.0		GOOD GROUND
2	4 1		36-42	GOOD SUPPLY VOLTAGE
3	4 3		3.0-6.0	GOOD TRIGGER VOLTAGE

Tests 1-3
 Good?

NO

IMPORTANT!!!
 Remove the Battery and Zip Tie around the "On" switch and safety trigger per Fig. 7

Replace Controller:
 Part Number 24334 (CLIPS)
 OR
 Part Number 25675 (NO CLIPS)
 Reassemble powerhead, attach Auger and Battery

YES

IMPORTANT!!!
 Remove the Battery and Zip Tie around the "On" switch and safety trigger per Fig. 7

Install LED Light Kit Part Number 25965 per Fig. 9
 Reassemble powerhead, attach Auger and Battery

GO FISHING

