

Robot Mower “Dead Robot” Trouble-Shooting Guide

1. Ambrogio Lawnbott Robot Dead on the Wire in Various Places

The most likely cause is something is keeping the robot from docking and it keeps circling the wire until the battery goes dead. The way to trouble-shoot the problem is to put the robot back in the base to charge. When charged, press the charge button to get it to come out. It will go straight for the wire if it is not time to mow. If it is time to mow, then you will have to press the charge button (it might be a different button on newer robots). Lift up the handle to direct the robot to the wire coming out of the back of the base. Now walk behind the robot as it travels to the base and pay specific attention to its attempt to pull in. You will probably see that it cannot pull in and it will go around the base to try again.

2. Ambrogio Lawnbott Robot Not Charging Because it Cannot Pull in Properly

There are a few reasons the robot might not pull in properly and they are mostly due to base and wire positioning. If you do not have enough straight wire in front of the base, it can have trouble pulling in. A curve in the wire just before the base opening can cause it. Settling of the base or wet wheels can cause it to not dock properly. Putting the base on a hill can definitely be an issue. Solve the problem, whatever it is, and the robot will no longer die on the wire. One customer added traction to the base to make it less slippery and his problem was solved.

There can also be a mechanical issue if a part was changed. See if you can observe the mechanical problem. For example, a customer had his robot upgraded and discovered it was slightly taller so now the bolts did not fit under the charging plates. He had a very old base. He solved the problem by filing down the bolts.

3. Ambrogio Lawnbott Robot Not Charging Fully, Won't Turn On

Blown fuse Check all three fuses on the motherboard. 20/30A, 1A and cylindrical fuse under black plastic cap, upper left corner. **Cable Disconnected** You worked on the robot recently or just took the lid off and the ribbon cable to the display board got disconnected. Remove the main fuse (20/30A) to power everything down, reconnect it and then insert the fuse again. **Keypad Issue** Keypads typically last about 5 years. The “off” or “stop” buttons could be permanently activated. **Charging Problem** The amount the batteries are charged is indicated either as a percentage or as a 4 digit number (the first two digits are the voltage, the second two digits are after the decimal point). If the robot won't go over a certain voltage or percentage, it could be an issue with the power supply, the recharging connections up to the motherboard or the motherboard itself. Shine the plates and charging contacts with fine sandpaper to remove the fine layer of oxidation that inevitably builds-up over time. Check for oxidation under the recharge knobs, clean with alcohol and a toothbrush. If it looks ok, contact us for additional instructions.

4. Ambrogio Lawnbott Pulls in and Backs out Immediately or Goes Right Through the Base

This cause is usually electrical in this case. Most likely is oxidation has built up on the plates and/recharging contacts. This is a very common issue. Every year we receive 10-20 calls where oxidation turns out to be the issue. Take some fine sandpaper and shine them up. You cannot see the oxidation. Since it is so common, always try this first before moving on.

5. Ambrogio Lawnbott Robot Backs Out Partially

The robot backs out just enough that the bolts are not touching the plates. This is usually caused by a bad fuse on the motherboard or a completely dead battery. There are 3 fuses. Two are automotive and one is under a black cap. Check them. Also verify the battery is holding a charge. Charge the battery overnight. Disconnect both wires and measure the battery voltage directly on the battery terminals. It should be around 29V, if not, something is wrong. If you cannot access the battery terminals (flat battery), carefully bend metal paperclips in each connector slot making sure you ****never**** touch them together. Then measure with the meter in Volts DC (Range 200V) Be careful not to have the meter probe plugged in the Amps (A) slot on the meter, and don't mistakenly put the meter on AC Volts (usually indicated by squiggly lines) or ohms (usually indicated by the Greek letter Omega).

6. Ambrogio Lawnbott Robot Found Dead in the Middle of the Yard

Most likely, the robot ran into some trouble, like it hit a branch or got a bump error, sat there beeping awhile with the message on the display and then eventually turned off. Since it was off when you found it, it appears due to the battery, but it's not. First, turn the robot on, let it start up and say “Pause” on the display, press “Start” and move out of the way. If the robot starts successfully, it means the error has cleared up. If the robot starts and then stops and is beeping, you need to read the display. If the robot won't turn on at all, it needs to be re-charged and checked after a full charge. If it continues to die and cannot be turned back on, additional diagnosis is needed.

One possible cause is a failure on the keypad. The buttons on the keypad only last about 5 years. You can sometimes see a faulty button if the button bubble is flat. For example, if the On/Off button has started to fail, it may turn the robot off while it is running. It may be impossible to turn it back on without putting it in the base. Then, if the button recovers before it backs out again, the problem could go away for awhile and then come back in a similar fashion.

It is also possible the battery is bad. This is more likely to happen earlier than 8-10 years if the robot is not charged once per month when not in use, such as over the Winter. Fast drop of the voltage after running awhile is an uncommon battery failure mode. If the battery fails in this way, the robot will be off before you can even look at the display. You won't be able to turn it back on without putting it in the charger. You can probe the battery voltage with the meter while pressing the “on” button to see the



Web: ParadiseRobotics.com
Email: info@paradisrobotics.com
Tel: (847) 960-8520



Robot Mower “Dead Robot” Trouble-Shooting Guide

7. Ambrogio Lawnbott Robot Won't Turn on after Full Charge

This can be due to the robot itself or the power electronics or a connection issue in the base or its wiring. It can also be caused by an issue with the keypad. Lastly, one of the batteries could have failed.

Test Voltage at Base

Verify there is 29.3V at the charging plates in the base. Use a digital multimeter and set the range on 200V DC. If the plate voltage is 29.3V, the problem is in the robot or the robot is not making contact with the plates when it pulls in. Gently shine up the plates on the base and charging nuts/pins on the robot with fine sandpaper to ensure the batteries are receiving charge from the plates. Then if the problem persists, it is necessary to test the batteries in the robot with the meter.

Test Battery Voltage(s)

Open the hood/take off the cover, being careful not to accidentally unhook any cables to the keypad electronics that may be present on the cover (certain models, disconnect power to motherboard before reconnecting any cables). L75/85 - see our disassembly instructions.

Now use the meter with the same settings and measure the voltage at the battery tabs. For certain models, you can make contact inside the black/red connectors without removing them. Other models, you may have to slide the connectors up a little. Don't remove both connectors - that way there is no possibility of mixing them up when re-connecting and creating a bigger issue (it will fry the robots circuit boards - permanently). The voltage will read close to 29.3V, most likely somewhat less, unless there is a problem with the fuses, battery or possibly the robot was not making good contact with the base (check for oxidation).

If you measure a lower voltage, such as 26V, it could mean that a single cell in one of the batteries failed. If you have multiple batteries installed, most likely only one battery has failed. The others cannot charge past the lowest voltage. It is necessary to determine which battery is putting out the low voltage. The procedure is to disconnect all but one battery and charge it fully. Then read the voltage on the display with the robot out of the base. Prop the robot on something or chase after it. For each battery one at a time, what is the voltage? If you have 3 batteries installed, likely, two of them will read something close to 29.3V while only one of them will indicate a lower voltage after a full charge.

Test Battery for Catastrophic Failure

After 8-10 years of use (when charged once per month over the Winter), a battery may fail in a catastrophic manner, but it may not appear to be failed (voltage reads ok). In rare cases, the battery may fail in a catastrophic manner sooner, but this is not typical.

Hold the meter probes on the battery contacts with one hand. Look at the display. Now press and hold the “On” button and watch the meter for 10 seconds. Does the voltage hold steady? If yes, all is well. If the voltage plummets, the battery has failed.

Keypad

Another possibility is the keypad off button is activated all of the time. The robot cannot turn on because it is being told to stay off. Usually you can see that the off button is flattened from use. Replace the keypad and it will likely fix the issue.

Circuit Board Failures

On rare occasions, the display board and/or the motherboard and/or the keypad have failed. The buttons will be non-responsive. This can occur if water leaks inside the robot somehow. The electronics and cables become corroded and short circuits occur. Corrosion looks like a white powder and can sneak up into cables. Be diligent with Winter Service maintenance to catch the issue before it becomes a serious problem. Corrosion may be cleaned off with alcohol and a very soft toothbrush. Do not scrub electronics vigorously.

It is always best to have your dealer perform Winter Service and storage each year. If you do not have a dealer near you, contact us to obtain our Free Winter Service Maintenance guide/price sheet to perform Winter Service yourself and to learn about pricing if you would like to have us perform the maintenance.



Web: ParadiseRobotics.com
Email: info@paradisrobotics.com
Tel: (847) 960-8520



Robot Mower “Dead Robot” Trouble-Shooting Guide

6. Other Tests- Troubleshooting FlowChart Ambrogio or Lawnbott Robots

Tried steps 1-7 but still cannot find the source of the issue? It's time to systematically go through the troubleshooting flowchart. Sometimes a circuit board or motor will fail in a way that causes the robot to be unable to turn on. This flowchart enables diagnosis of which component is causing the problem. The flowchart is applicable to 2016 robots and before.

