

Service instruction 46 – Troubleshoot/repair hose spreader

2020-03-30

Machines concerned: EVO Cleaner

Attended: When the hose spreader stops working.

Symptom: The hose does not roll up evenly on the hose reel.

Necessary equipment: Screwdriver, Heating gun, MS Polymer, 10 mm wrench

Background: The hose spreader is mounted to roll up the hose evenly distributed on the hose reel. For various reasons, it happens that it stops. Here we go through different errors and the solutions to these problems

1. Start the robot. Lower the det transport wheel so the robot stands with the rear wheels in the air
 - a. Double click on the rear wheel of the robot, the drive wheels will then start to drive, the hose reel will try to roll up the hose and the hose spreader will start to swing in its motion



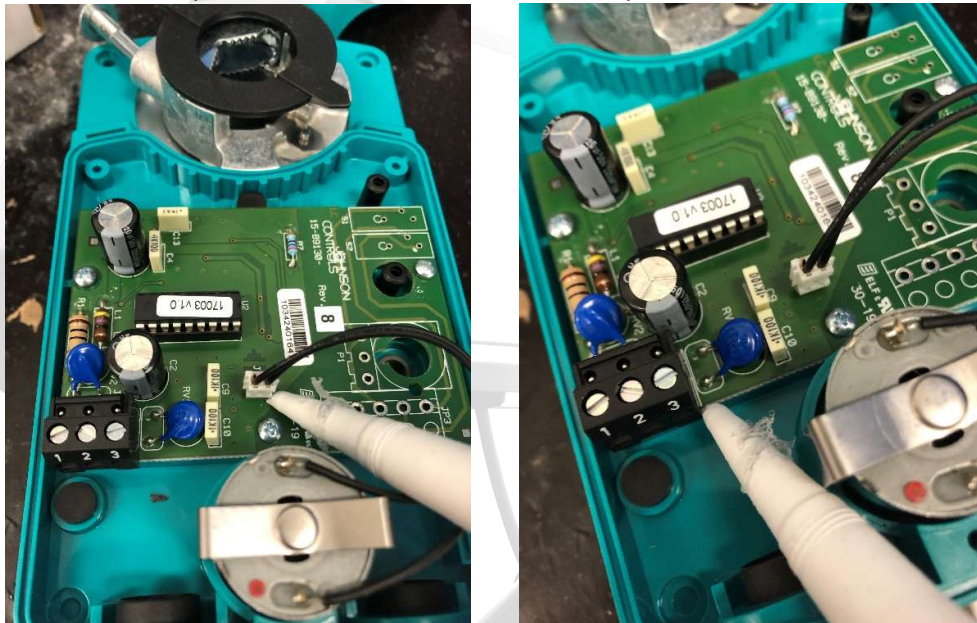
2. If the hose spreader is not moving, wait for at least 2 minutes, the hose spreader can stand and wait at its turning point before turning. If it does not start, then the troubleshooting begins in the hose spreaders enclosure.



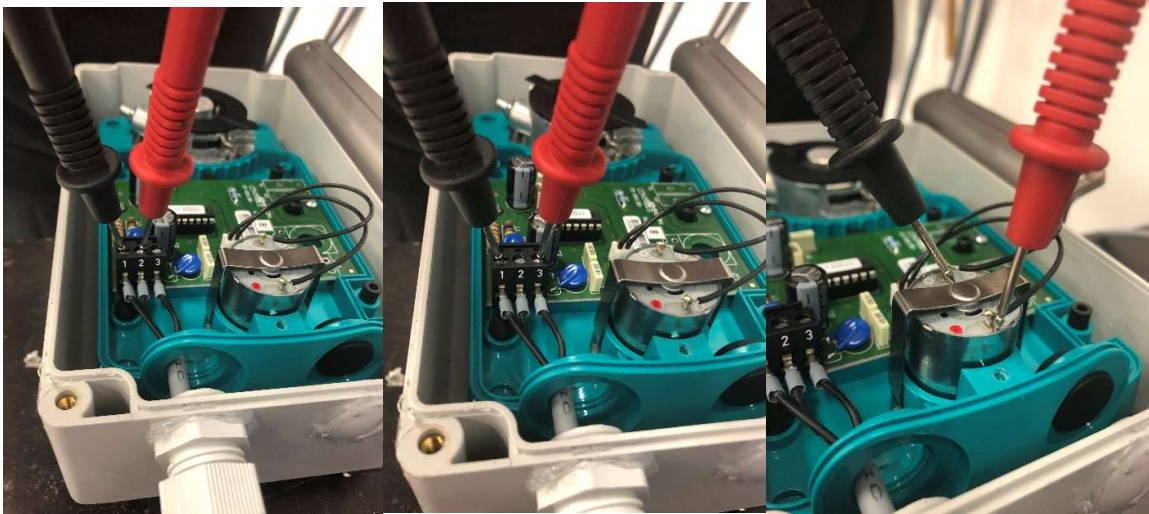
3. The cover of the housing is removed with 4 screws, one is very narrow but can be removed with a small chisel. Remove the side of the robot to make more space while you work



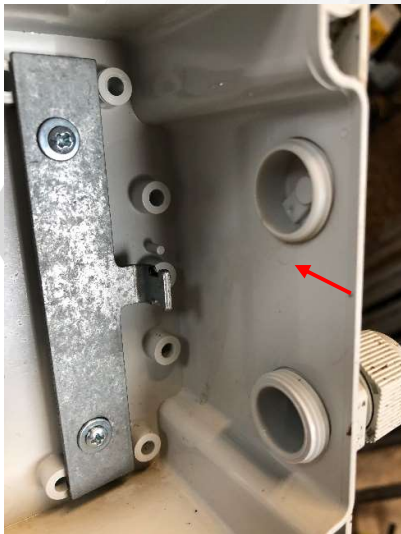
4. Due to vibrations in the robot, the connectors may jump of its place. To fix this we put a small amount of MS Polymer on the connector to hold it in place



5. Measure on the connector if you have power from the circuit board, between pins 1 and 2 it should be 24 V when the spreader motor is running. When the motor is going the opposite direction, it will have 24V between pin 1 and pin 3 too
Measure the cables for the small electric motor as well, to check if the circuit board is broken



6. Once inside, it must be checked if moisture has entered the enclosure, it may happen that water enters through the plug, cable entry or entrance to the hose spreader rod.
Here you can see how water has flowed in from different entrances

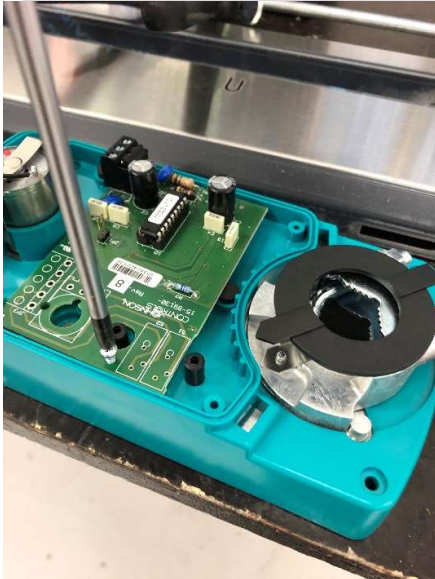


7. In case of moisture in the box, the spreader motor is removed and dried, and all three places are sealed with MS Polymer. Do not forget to seal the two screw holes for the bracket bushing. Also, take out the sealings for the spreader rod, put some MS polymer on the outside of the sealings and put them back again.
8. To remove the spreader motor, loosen the spreader rod and pull it out of the enclosure, then you need to unhook it from its attachment in the bottom of the enclosure



Note: Every robot that needs repair done inside the hose spreaders enclosure, needs to be sealed with MS Polymer in the three different entrances if it is not already done.

9. Remove the spreader motor circuit board and dry it with the hot air gun, the moisture that has landed on the circuit board causes the motor to stop, but can be fixed with this trick. If this does not work, change the spreader motor



10. Reassemble the parts in reverse order, make sure the hose spreader rod is fitted in the right position at the hose reel and travels equally far in both directions.

