Troubleshoot/repair hose spreader

Description

The robots hose spreader distributes the hose equally on to the hose reel. It could happened that it stops, which could cause "hose reel stuck" alarm. 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.
    1. Double click on the rear wheel of the robot, this will make the rear wheels lock the drive backwards, 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 doesn't move, wait for at least 2 minutes, the hose spreader can stand still and wait at its turning point before turning. If it does not start, then the troubleshooting begins in the hose spreader box.
3. The lid of the box is mounted with 4 screws, one screw is a bit tricky to remove but can be removed with a small flat chisel. Remove the grey plastic 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. Check the connector if you have power from the circuit board. Check with a voltmeter, it is 24V between pin 1 and pin 2 when the wheels are rotating and the hose spreader motor is running in a given direction. If you change direction on the wheels (on the manual screen) or the spreader switch direction at the turning point the hose spreader motor will go the other direction, then it is 24V between pin 1 and pin 3 instead. Measure the cables for the small electric motor as well, to check if the circuit board is broken.
6. Once you have measured and checked if the hose spreader motor have power, you must check if moisture/water has entered the box. 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. You must seal all three entrences if this isn't done already.
    1. To remove the spreader motor, loosen the spreader rod and pull it out of the box. then you need to unhook it from its attachment plate in the bottom of the box.
8. Dry the motor out of moisture if there has been water inside of the box.
    1. The moisture that has landed on the circuit board causes the motor to stop, but can be fixed by drying the motor/circuit board. Remove the spreader motor circuit board and dry it with a heat gun. If this does not work, change the spreader motor.
9. 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.
10. Reassamble the parts in revers order, make sure the hose spreader rod is fitted in the right position (pushed against the box as much as possible). Also make sure that the spreader rod distributes the hose even on the hose reel. It's important that the rod travels equally in both directions (22,5 degrees from the center) and doesn't exceeds over the edge of the reel.

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Last update: **2026/09/08 23:30**