

## **AutoSPRAY Reverse Polarity Installation Manual**

### **I. Description**

- a. The Leica AutoSPRAY is compatible with a wide variety of spray rate controllers. Leica has a range of easy to install interface cables available for most spray rate controllers.
- b. Most spray rate controllers have a single wire for each section from the controller to the solenoid or valve on the actual boom spray which regulates when the section is ON or OFF. Different controllers will have section switches build into the controller unit, whereas others will have separate or remote switches installed elsewhere in the vehicle for ease of use.
- c. The Leica AutoSPRAY works in a similar format to the remote switches. The AutoSPRAY will energize individual wires for each section which will open the solenoid or valve for that respective section. When necessary, the sections will be de-energized and the sections will close accordingly.
- d. The Polarity Reversing AutoSPRAY kit will control up to five individual boom sections on the spray rate controller and also will detect the master switch. This kit can be used for any vehicle that has polarity reversing section switches. That is, each switch has two outputs. One output wire has 12Vdc and the other has 0Vdc (ground). The voltages (polarity) on the output wires reverse depending on whether the switch is in the ON or OFF position.

### **II. Installation**

- a. This section describes how to connect and install the Polarity Reversing AutoSPRAY kit. The installation and configuration of the Leica AutoSPRAY Controller is detailed in the appropriate User Manual.
- b. It is recommended that all electrical wiring should be installed by a qualified auto-electrician. Incorrect wiring may damage the AutoSPRAY controller and/or the spray rate controller.
- c. Installing the Polarity Reversing AutoSPRAY kit (1-0302):
  - i. Locate the wiring section switches inside the cab
  - ii. For each switch, identify which posts/wires are output wires
  - iii. On each switch, identify which output post/wire is +12Vdc when the switch is ON and which post/wire is 0Vdc (ground) when the switch is ON. The opposite should be true when the switch is OFF. The wire that was +12Vdc when the switch is ON should be 0Vdc when the switch is OFF. The wire that is 0Vdc when the switch is ON should be +12Vdc when the switch is OFF.

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- iv. Remove each switch output wire and connect it to the AutoSPRAY kit output wires. It is recommended moving one switch at a time to more easily keep track of each wire's function. The AutoSPRAY output wires are coming out of the bottom of the box.
  - v. On the now empty switch posts, connect the AutoSPRAY kit input wires. The AutoSPRAY input wires are coming out of the top of the box.
  - vi. Before continuing the installation, test that the section switches work as before. Without the 16 pin AMP connector plugged into the back of the Leica AutoSPRAY controller, test that each boom can still be manually turned ON and OFF with the section switches. Also, verify that they are ON when the switch is in the ON position and OFF when the switch is in the OFF position.
  - vii. In some cases, there are additional posts or additional wires on the section switches. These are sometimes connected to the rate controller for sensing the boom sections or to such things as acreage counters. Determine whether the device is plugged into the switch to receive +12Vdc when ON or +12Vdc when OFF. Typically devices are plugged to receive +12Vdc when the switch is ON. For the device to continue to operate properly, move and connect/splice the wire to the wire of the same polarity that was previously removed from the switch and attached to the AutoSPRAY Output wire.
  - viii. Subsequent to being successfully completed, the circular AMP connector coming from the Polarity Reversing AutoSPRAY kit plugs into the Leica AutoSPRAY controller as detailed in the AutoSPRAY installation manual. All AMP connectors have keys so that they will only fit one way and are twisted clockwise to lock the connector in position. The pin-outs of the AMP connector as shown in ***Error! Reference source not found.*** are for reference only.
- d. Installing the Polarity Reversing AutoSPRAY kit Master detect wire
- i. There should be a yellow wire with a red stripe coming out of the Polarity Reversing AutoSPRAY kit labeled "master." If it cannot be found it may be necessary to open the box of the kit, locate the wire and run it out one of the existing holes.
  - ii. Locate the spray master switch. Determine the side of the switch or a wire coming from the switch that is energized to 12Vdc when the master is ON and de-energized (0Vdc) when the master is OFF.

- iii. Splice the yellow and red master wire from the 1-0302 kit with sprayers master switch or wire identified in the previous step for automatic master detection.

### III. Testing

- a. The test will require that the AutoSPRAY controller be connected with a GPS receiver and that the spray rig be partially filled with water to undertake an in-field test. The test will require the spray rig to be in a field where the boom spray can be operated in a typical manner.
- b. To test the master, make sure the AutoSPRAY has been set up for “external” master control. Refer to the AutoSPRAY users manual on how to do this. With the power ON in the sprayer and the rate controller running, watch the master symbol on the Leica AutoSPRAY unit and turn the master ON by pressing the master switch in the cab. The master symbol on the Leica AutoSPRAY should show that the master is now ON. Turn the master OFF again by pressing the master switch and verify the symbol on the AutoSPRAY reflects that it is now OFF.
- c. With the master ON and all of the section switches in the OFF position, run the self-test in the Leica AutoSPRAY controller. Verify that every section turns ON and OFF. Also verify that the sections turn ON and OFF in the proper order. They should cycle from left to right when viewed from the back of the boom looking forward.
- d. All further testing details can be found in the AutoSPRAY User Manual

### IV. Disclaimer

- a. No liability is assumed with respect to the use of the information contained herein. While every precaution has been taken in the preparation of this manual, Leica assumes no responsibility for errors or omissions and is not liable for any damages resulting from the use of the information. Further, this manual and the features described are subject to change without notice.
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