



Dutchman

I N D U S T R I E S

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DIVISION OF
Dutchmaster Nurseries Ltd.

Electric Hydraulic Spade Troubleshooting

Manufactured and Sold by
Dutchman Industries Inc.
3735 Sideline 16, Brougham,
Ontario, Canada L0H 1A0

1.800.293.0070
1.905.683.8233

www.dutchmantreespade.com
www.dutchmantruckspade.com

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TROUBLESHOOTING FOR ELECTRIC HYDRAULIC SPADE

If your tree spade has lost one or more of its functions, it may be due to a variety of reasons that can be isolated by reviewing the following trouble shooting tips.

- Check the fuse located by the controller. The fuse is a standard 5-amp that can easily be replaced.
- Turn the key for the loader unit on in order to energize the spade electronics. *Turn the key to accessory mode if possible.
- Find and open the "Circuit Board" box, which is located directly above the valve bank attached to the tree spade.
- Check to make sure the circuit board "Power" light is on. This will insure that electric current is flowing to the circuit board.
- Activate all available circuits on the control box or pistol grip. This should be done one at a time so as to avoid confusion.
- The circuit board contains lights that correspond to the functions on the controller. Therefore, by pressing or moving a switch, the top row of lights and the bottom row of lights should light up.

POSSIBLE ISSUES

1. The "Power Light" stays on but no other indicator lights light up.

- This would indicate that a ground wire from the controller is not secured properly or that the ground wire has fallen off from its contact.
- Retrace the ground wire coming from the control box and make certain that the ground lead is fastened to a proper ground that reads "0-volts". Check to ensure that the positive and negative "butt plugs" coming out of the controller are fastened together. Also check that the ground wire from the controller is not severed or spliced into the positive wire.

2. One or more of the top indicator lights do not light up.

- This would indicate that there is a wire coming from the controller to the circuit board that has been severed, pinched, or fallen off of contact from the plug.
- With the use of a test-light, test all plug-ends by having another person press or move the functions. One power light will stay on constantly and the others will light up when activated. If there is a function(s) that does not light up when activated, examine the cord and plug connections from the circuit board to the controller and be sure that the cord has not been pinched or cut. Also check the ends of the plug to be sure that the wires are securely fastened to the plug ends.
- If a wire "break" can be detected, then turn off the power from the loader. Using a small knife, make a small, lengthwise incision in the cable being careful not to cut into another wire. Locate the wire "break" and splice it back together if possible. Using the test light again, test to see if all functions work.
- If the functions are working again. Tape the repaired cable using electrical tape.

3. One or more of the bottom lights do not light up.

- This would indicate that a ground from the controller is not secured properly or that the ground wire has fallen off from its contact.

- Retrace the ground wire coming from the control box and make certain that the ground lead is fastened to a proper ground that reads "0-volts". Check to ensure that the positive and negative "butt plugs" coming out of the controller are fastened together. Also check that the ground wire from the controller is not severed or spliced into the positive wire.

4. The indicator lights light up but none of the functions operate.

- This would most likely indicate that the "Main Solenoid", which is located on the top of the tree spade valve, is not functioning.

- Check the wire harness connections on the bottom of the circuit board and be certain that they are fastened securely.

- Also check to see that there is adequate oil flow coming from the loader to the tree spade.

- If there is not proper oil flow, it may be attributed to poor loader pump sender and/or restricted coupler connections.

5. The indicator lights light up but one or more function(s) do not operate.

- This would most likely indicate that there is problem at the valve body on the tree spade.

- Check the wire harness connections on the bottom of the circuit board and be certain that they are fastened securely.

- If all wires are fastened securely then check the wires that lead into the coils of the valve.


- Listen to hear if the coils are "clicking". This insures that there is power going to the coils.

- Using a metal end (i.e. pocketknife or screwdriver), check to see that the nut that holds the coil in place has magnetism. The metal end should stick to the nut when the function is activated.

- With a plastic end, lightly tap the nut to see if it releases the function. This would likely indicate that a valve actuator has become stuck and needs a replacement.

6. One of more of the functions are operating backwards

- This likely means that there is too much pressure applied to the "Tie Rods". **The tie rods are the three long bolts that run vertically between all valve sections. The purpose is to hold all the valve sections in place.**

- Using a "Torque Wrench", re-adjust the tie rods to **8-foot pound pressure**. If a torque wrench is not available, re-adjust the tie rods so that they are a quarter to half past hand tight.

If the above tips do not help the problem, then unplug the wire harnesses on the circuit board itself and remove it from its housing by unscrewing the bolts located on the corners and check to see if there is any discolor on the back of the board.

If there is discoloration on the back of the circuit board, it is advised that you call for technical support from the manufacturer.

Dutchman Industries Inc.

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During the warranty period, the authorized selling DMI Dealer shall furnish parts without charge for any DMI product that fails because of defects in material and/ or workmanship. This warranty and any possible liability of DMI hereunder is in lieu of all other warranties express, implied or statutory, including but not limited to any warranties of merchantability or fitness for a particular purpose.

The parties agree that the Buyers **SOLE AND EXCLUSIVE REMEDY** against DMI, whether in contact or arising out of warranties, representations, instructions, or defects shall be for the replacement or repair of defective parts as provided herein. The Buyer agrees that no other remedy (including, but not limited to, incidental or consequential loss) shall be available to him. If, during the warranty period, any product becomes defective by reason of material or workmanship and Buyer immediately notifies DMI of such defect, DMI shall, at its option, supply a replacement part or request return of the product to its plant in Brougham, Ontario, Canada. No parts shall be returned without prior written authorization from DMI, and this warranty does not obligate DMI to bear any transportation charges in connection with the repair or replacement of defective parts. DMI will not accept any charges for labour and/or parts incidental to the removal or remounting of parts repaired or replaced under this Warranty. **A formal, faxed estimate to DMI is required prior to any foreseen warranty repairs, alterations and/or labor.**

This Warranty shall not apply to any part or product which shall have been installed or operated in a manner not recommended by DMI, nor to any part or product that has been neglected, or used in any way which, in the Manufacturers opinion, adversely affects its performance; not negligence of proper maintenance or other negligence, fire or other accident; not with respect to wear items included but not limited to items such as tree spade blades and wear strips; nor if the unit has been altered or repaired or repaired outside of a DMI authorized dealership in a manner of which, in the sole judgment of DMI affects its performance, stability or reliability. Equipment and accessories not of our manufacture are warranted only to the extent of the original Manufacturers Warranty and subject to their allowance to us, if found defective by them.

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