

Troubleshooting Guide

Glossary of Problems:

1. Pump motor does not run.
2. Pump continues to run with switch in neutral.
3. Pump will not lower.
4. Plow will not raise or raises slowly, motor runs.
5. While trying to raise the plow, blades extend and wings will not retract.
6. Wings drift back when extended.
7. Plow lowers too fast.
8. Wing(s) will not extend, but motor runs.
9. Wing(s) will extend, but will not retract or retract slowly.
10. Wing(s) retract too easily while plowing.
11. Oil leaks from cylinders.
12. Battery goes dead with all switches in neutral.
13. Plow lights are dim, will not come on or flicker.
14. Turn signals flash at a rapid rate.
15. High beam indicator light not functioning properly.
16. Blade digs into the ground in the V position.
17. Blade does not lay flat against the ground in the scoop position.
18. Blade trips too easily.
19. Plow does not clean-up snow from low areas.
20. Oil runs out of fill cap of hydraulic pump.
21. Pump chatters when raising the plow or extending wings.

PROBLEM	DIAGNOSTIC CHECK	RESULT
1. Pump motor does not run.	Check that power/ground cables and control cables are connected properly.	Connect.
	Check for voltage at pump motor while ignition switch is on and LIFT control button is pushed.	If voltage is present, pump motor has failed or pump has seized. Motor brushes may be replaced, otherwise replace pump/motor assembly.
	Check for power to the solenoid by testing for voltage between both large terminals and ground.	If voltage is not present between one large terminal and ground, the cable between the battery and solenoid is disconnected or broken.

Troubleshooting Guide

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	Check for voltage between the other large terminal of the solenoid and ground while jumping power to the small terminals with the white wire.	If NO voltage is present, solenoid has failed and must be replaced. If voltage is present, wire from small terminal of solenoid to ground may be disconnected or broken.
	Test power to the control box by checking voltage between black wire and ground at the white 9-pin connector.	If NO voltage is present, power from fuse box has become disconnected. If voltage is present check wiring and control box switch.
2. Pump continues to run with switch in neutral.	Disconnect control box, ignition ON.	If pump continues to run, solenoid has failed in the closed position. Quickly remove power to the pump by disconnecting the power/ground cables to the plow. Replace solenoid.
		If pump stops running, check wiring of switch box for short between black and white/black wire in control box, or failed switch.
3. Plow will not lower.	Check power/ground cables and control cables are connected properly.	Connect.
	Check flow control valve.	If flow control valve is completely closed, place RAISE/LOWER switch on control box in NEUTRAL, then open the flow control valve.
	Check wiring on valve block for proper connections.	Refer to the wiring diagram in this manual.

Troubleshooting Guide

PROBLEM	DIAGNOSTIC CHECK	RESULT
	Check for voltage between solenoid valve terminal and ground with ignition switch on and control switch in FLOAT position.	If voltage is present solenoid valve or valve coil has failed. Replace valve.
	Test power to the control box by checking voltage between black wire and ground at the white 9-pin connector.	If NO voltage is present, power from fuse box has become disconnected. If voltage is present, check wiring and switch of control box.
4. Plow will not raise or raises slowly (pump motor runs).	Check hydraulic fluid level.	Hydraulic fluid level should be within 3/4" from top of reservoir when lowered and in the V-position.
	Check power/ground cables and control cable are connected properly.	Connect.
	Check wiring on valve block for proper connections.	Refer to the wiring diagram in Hydraulics manual.
	Load test battery.	Replace battery if weak or defective.
	Check pressure at pressure port of pump.	If pressure is less than 2500 psi (at end of lift). Motor brushes may be defective, pump pressure relief valve may be contaminated, damaged, or set less than 2500 psi, pump may be worn.
	Check LIFT Solenoid Valve	Lift solenoid valve not opening completely. Replace.
		Check wiring and switch box control
5. While trying to raise plow, wing(s) extend prior to raising plow and will not retract.	Check the pressure and return line routing.	Pressure line MUST be connected from P on pump to P on valve manifold. Return line MUST be connected from R on pump to T on valve manifold.

Troubleshooting Guide

PROBLEM	DIAGNOSTIC CHECK	RESULT
6. Wings drift back when extended.	Check wing return solenoid valve on manifold Check pressure	If solenoid valve is contaminated, clean or replace. If pressure relief valve is contaminated, clean or replace.
7. Plow lowers too fast.	Check flow control valve.	Close flow control valve to desired drop speed.
8. Wing(s) will not extend or extend slowly, motor runs.	Check hydraulic fluid level.	Hydraulic fluid level should be within $\frac{3}{4}$ " from top of reservoir when lowered and in the V-position.
	Check power/ground cables and control cable are connected properly.	Connect.
	Check wiring on valve block for proper connections.	Refer to the wiring diagram in this manual.
	Load test battery.	Replace battery if weak or defective.
	Check pressure at pressure port of pump.	If pressure is less than 2500 psi (at end of lift). Motor brushes may be defective, pump pressure relief valve may be contaminated, damaged, or set less than 2500 psi, pump may be worn.
	Check WING OUT solenoid valve.	WING OUT solenoid valve not opening completely. Replace.
		Check wiring and control box.
9. Wing(s) extend, but will not retract or retract slowly.	Check power/ground cables and control cables are connected properly.	Connect.
	Check wiring on valve block for proper connections.	Refer to the wiring diagram in this manual.
	Check for voltage between solenoid valve terminal and ground with ignition switch on and control switch in WING IN position.	If voltage is present, solenoid valve or valve coil has failed. Replace valve. If NO voltage is present, check wiring and switch box control.

Troubleshooting Guide

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10. Wing(s) retract too easily while plowing.	Pressure relief valve pressure set too low.	See an Authorized BOSS Dealer for pressure relief valve adjustment.
11. Oil leaks from cylinders.	Loose packing.	Tighten packing 1/8-turn increments until leak stops.
	Check rod condition.	If rods are pitted or rough, polish with copus cloth or extra fine steel wool.
12. Battery goes dead with all switches in neutral.	Possible short in switches.	Inspect wiring of control box switches, replace switch(es).
	Possible short in wiring harness.	Repair damaged wire.
	Possible short in valve coils.	Replace coils.
13. Plow lights are dim, will not come on or flicker.	Check electrical connections.	Clean and repair any corroded or damaged terminals.
	Check headlight adapter wires.	Verify proper headlight adapters are being used and are correctly installed.
	Check for good ground of plow lights.	Sand paint under headlight mount to bare metal, securely tighten headlight-mounting bolts.
14. Turn signals flash at a rapid rate.	Check flasher.	Replace original vehicle flasher with heavy-duty six-lamp flasher provided.
15. No high beam indicator does not function properly.	Check headlight adapters.	Verify proper headlight adapters are being used and are correctly installed.
	Check electrical connections to plow lights/truck lights toggle switch.	Refer to the wiring diagram in this manual.
16. Blade digs into the ground in the V-position.	Center shoe adjusted too low.	Add washers to the center shoe to raise the tip of the plow.
	Push beam installed too high.	Lower the push beam.
17. Blade does not lay flat against the ground in the scoop position.	Center Shoe Adjusted too High.	Remove washers from the center shoe to raise the tip of the plow.

Troubleshooting Guide

PROBLEM	DIAGNOSTIC CHECK	RESULT
	Push beam installed too low.	Raise the push beam. If push beam is at highest setting, Adjust the Bumper Stop further into the center section.
18. Blade trips too easily.	Check trip spring adjustment.	Tighten springs. Replace springs if permanently deformed or damaged.
19. Plow does not clean-up snow from low areas.	UP/DOWN switch not in neutral.	Place switch in DOWN (FLOAT) position.
20. Oil running out of fill cap of hydraulic pump.	Plowing on steeply inclined terrain.	Avoid too steeply sloped areas.
	Pump reservoir over filled.	Reservoir should be filled to $\frac{3}{4}$ " from top.
	Hitting snowbanks too hard.	Do not plow recklessly. Place plow in V-position and break up hard snowbanks.
21. Pump chatters when raising plow or extending wing(s).	Hydraulic fluid low.	Add hydraulic fluid. Reservoir should be filled to $\frac{3}{4}$ " from top.