

# TROUBLESHOOTING THE ELECTRICAL SYSTEM OF THE GN1324 & GN1340

## IMPORTANT

### PLEASE READ AND FOLLOW INSTRUCTIONS TO KEEP FROM DAMAGING NEW ELECTRICAL COMPONENTS

Here are some basic DO's and DO NOT's for troubleshooting the electrical system.

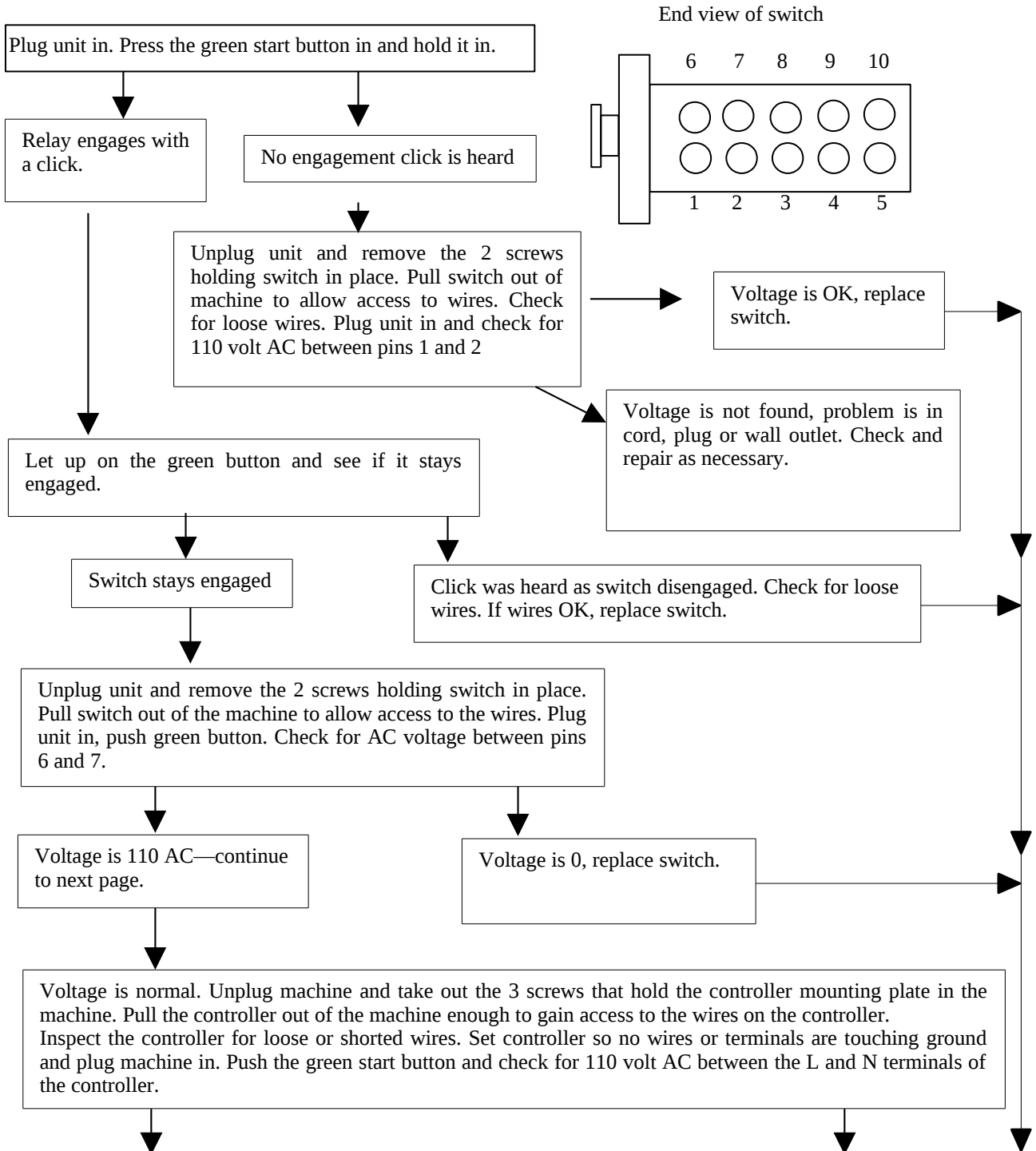
1. Always start by checking for proper voltage at the receptacle. A 110 volt machine should have 110 to 130 volts between the live line and the neutral wires of the receptacle. A 220 volt machine will have 110 volts between each of the live lines and the one neutral. A 220 must also have 220 to 250 volts between the two live lines.
2. Do not shortcut. Follow the troubleshooting chart to the end. You may find a bad controller but if you do not also check the motor, you could cause the new controller to fail as soon as the machine is turned on. Do not stop until you see the word "END".
- 3. Never replace a controlled without checking the motor and wiring first. You need to know if motor failure or shorted wires is what caused your controller to fail. Damaging a new controller with a bad motor or wiring can void the controller warranty!**
4. Never assume a motor shop is going to test your motor for a short to ground. A motor with a short to ground will run fine on some test benches and on a 12 volt battery charger. Always check your motor for any short to ground.
5. Be careful when installing the controller and mounting sheet metal into the machine. It is easy to pinch wires in the lower inside front corner of the pulley box. It is OK to trim some of the sheet metal away from the lower inside corner of the controller mount to assure sufficient room for the wiring.
6. Be careful around live circuits.

# TROUBLESHOOTING

## MOTOR WILL NOT RUN

Troubleshooting of the Granite machines can be accomplished with a simple volt/ohm meter that is available from most discount stores for under \$10.00. A 12-volt power supply such as a car battery or an automotive battery charger can be used to test the motor. A 110 volt electric light bulb with test leads attached is used to test controller function. **MAKE SURE THE MACHINE IS UNPLUGGED WHEN BEGINNING ANY MAINTENANCE OR REPAIRS ON ANY MACHINE!** A wiring diagram, controller replacement sheet and controller adjustment sheet are also needed with these instructions.

### TESTING OF THE AC INPUT AND THE ON/OFF SWITCH.



**MOTOR WILL NOT RUN**  
**(CONTINUED)**

Normal 110 volts AC, turn the speed control dial to max and check for DC voltage between A and A/F on the controller. This voltage can range from 90 volts down to 9 volts and be normal. A 110 volt light bulb can be used as a voltage tester between terminals A and A/F. The bulb brightness can be varied by the speed dial if the controller is functioning properly.

No voltage, problem is in the wires between the switch terminals 1&2 and the controller terminals L & N Repair wires.

No DC voltage, replace the controller and also go to the last step to check motor. **NEVER INSTALL A NEW CONTROLLER ON AN OLD MOTOR WITHOUT CHECKING MOTOR FIRST. A BAD MOTOR CAN DESTROY A NEW CONTROLLER AND VOID THE CONTROLLER WARRANTY!!!**

DC voltage is present, go to the reversing switch and check for DC voltage between the two center terminals on the reversing switch.

No voltage at reverse switch, the problem is in the wires that go from the controller to the reversing switch. Repair wires as needed.

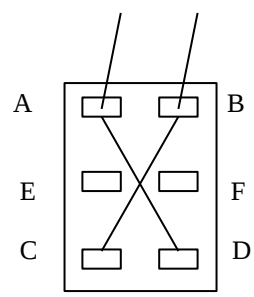
DC voltage is present, check for DC voltage between the two terminals on the reversing switch that have 2 wires on each terminal.

No voltage, replace the switch.

DC voltage is present, check wires going to motor. .

**UNPLUG THE MACHINE.** Remove the cover from the motor junction box. Remove the two wires coming from the switch Plug the machine in and check for voltage between the two wires coming to the motor from switch.

REVERSING SWITCH



DC voltage is not present, repair wires going to motor.

If voltage is present, remove the two top wires from the motor. There should be continuity between the two motor terminals but NOT to ground. A short to ground means the motor **MUST** be replaced. To test for a short to ground, place one of the test leads to one of the motor terminals. Place the other test lead on the case of the motor. Set the tester on ohms and slowly turn the motor through at least one revolution. There should be no signs of current flow. Another simple test of the motor is to hook a 12 volt power source such as a car battery or an automotive battery charger to the two top motor terminals.. The motor should run on 12 volts, not very fast but it should run. If it does not run, replace the motor.  
**END**