

MT400 and MT300 SYSTEM TROUBLESHOOTING

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“STARTUP” Circuit Wiring:

- When the START button pressed and the motor is running there should be 120VAC across the STARTUP-A and STARTUP-B terminals (the ARM and AC COM terminals on an MT300 board).
 - When the motor STOP button is pressed there should be zero voltage at the STARTUP terminals.
- Note: The “Startup” voltage is usually used to power the “ALM RELAY OUPUT” terminals on the right of the board (a yellow or orange wire makes this connection). In this way a horn hooked up to these terminals will sound a 10% Slowdown warning until the motor is shut down, then it will silence.

20% Shutdown Interlocks Wiring:

- The 20% Slowdown Relay (#2) should be wired to make/break the holding contact circuit of the motor START button.

Testing the MT400/300 Circuit Board:

- When the equipment is running you must have a good flashing Target light, not flickering or uneven. If not then make sure the spinning target discs are approx. 3/8” from the motion sensor.
- With a probe wired to the circuit board, disconnect the Black probe wire and rapidly tap it to its terminal. This will simulate a motion signal (Target light should flash) and you should be able to bring the meter up to 100% doing this.

Motion Probe VOLTS test: Measure Volts with the probe wires **attached** to circuit board:

- White wire to Ground (red or green wire) should read 12 VDC.
- Black wire to Ground (red or green wire) should read 6-7 VDC.
- A broken black wire circuit will cause 12 VDC to read at the black terminal.
A reading of 9 VDC indicates that the Black and White wires are reversed.

Motion Probe OHMS test: **Disconnect** the probe wires from the circuit board before OHMS testing.

Do not hold wires in fingers when testing, this will affect the Ohm readings. Touch all the probe wires together (to drain the internal capacitors) **before** running each Ohms test below.

Note: Red and Green wires are both Ground wires and can be interchanged.

Note: A good Ohms readings does not guarantee that the probe is good.

- **BLK-to-GRN=approximately 20K Ohms.** Measure between the Black wire (using the positive lead on Ohm meter) and Ground (using the negative lead on the Ohm meter), should be around 20K ohms.
- **WHT-to-GRN= approximately 3Meg Ohms.** Measure between the White wire (using the positive lead on Ohm meter) and Ground (using the negative lead) will start around 3Meg ohm, and may climb off scale to infinity.
- **BLK-to-WHT= approx. 3Meg Ohms.** Measure between the Black wire (using positive lead on Ohm meter) and white (negative lead) is around 3Meg ohm.
- **WHT-to-BLK= approx. 3Meg Ohms.** Next, reverse the leads: Measure between Black wire (using negative lead of Ohm meter) and white (using positive lead). The reading will start around 3Meg ohm and may climb off scale to infinity.