DUAL SPEED MOTOR TROUBLE SHOOTING GUIDE

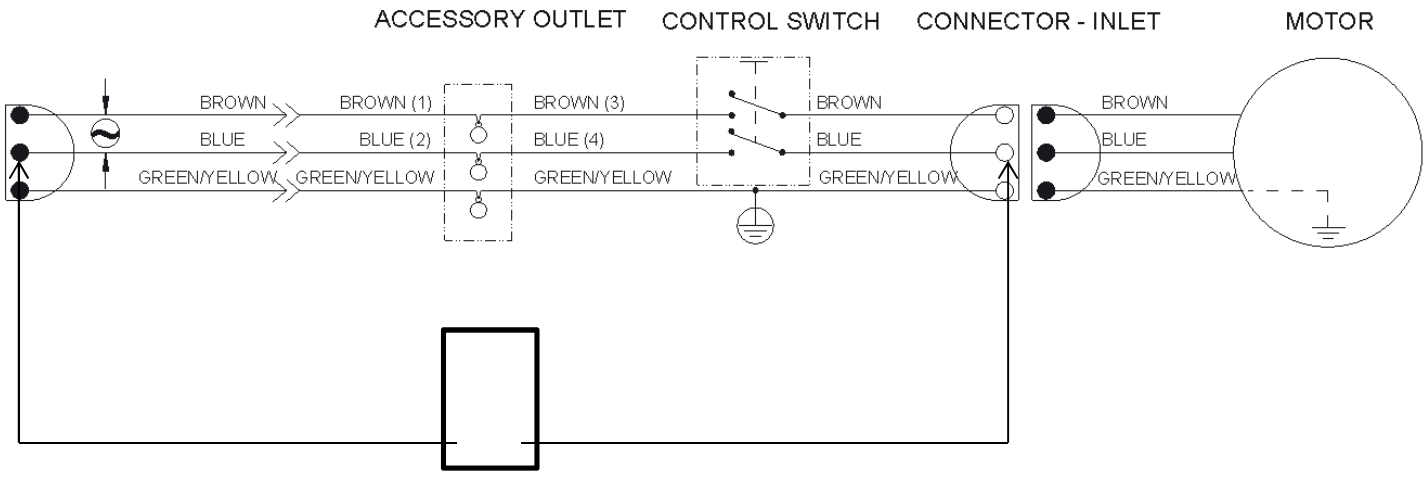
Instruments: Multimeter, Clamp-on (loop) ammeter

CIRCUIT TEST

Handle Circuit

Refer to illustration. Disconnect connector at motor. Recline handle 30 degrees to enable the switch to activate. Activate switch and measure continuity from each pole on the electric cable to the respective socket on the connector. Normal reading would be < 0,25Ω with deviation between poles no greater than 0,05Ω. A reading above 0,35Ω would indicate a bad connection or fouled switch and should be further investigated.

Once continuity is within normal range, check for electrical leakage. Set instrument to MΩ. Check continuity between the sockets on the connector, then from each socket to PE. If continuity is detected determine source of leakage.



Motor Circuit

Refer to the image and illustration below. Remove the motor the motor cover but do not remove the speed selection (rocker switch) switch. Raise the connectors on the electronic start switch enough to access the terminals with the probes of the multimeter. Do not remove the connectors. Keep the switch installed. Just pry the terminal up sufficiently to probe, or place the probe alongside the wire insulation The electronic start switch is located on the motor and appears as in the image.

Note: The electronic switch will function normally if the wires on 1 and 4 are reversed or if the wires on 2 and 3 are reversed.

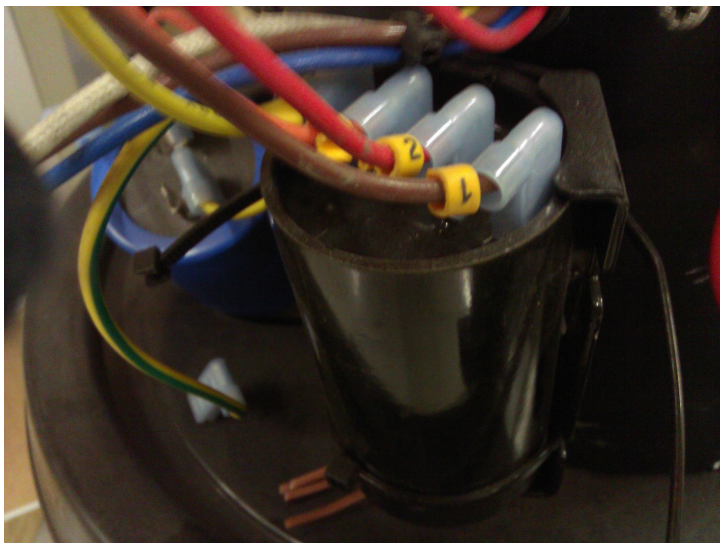
Select high speed on the speed switch. Set the multimeter to ohms. Measure the resistance between terminal 1 and 4. Compare this to the values shown in the table for Start High. Measure the resistance between terminal 1(4)and 2(3). Compare this value against the value shown in the table for Run High.

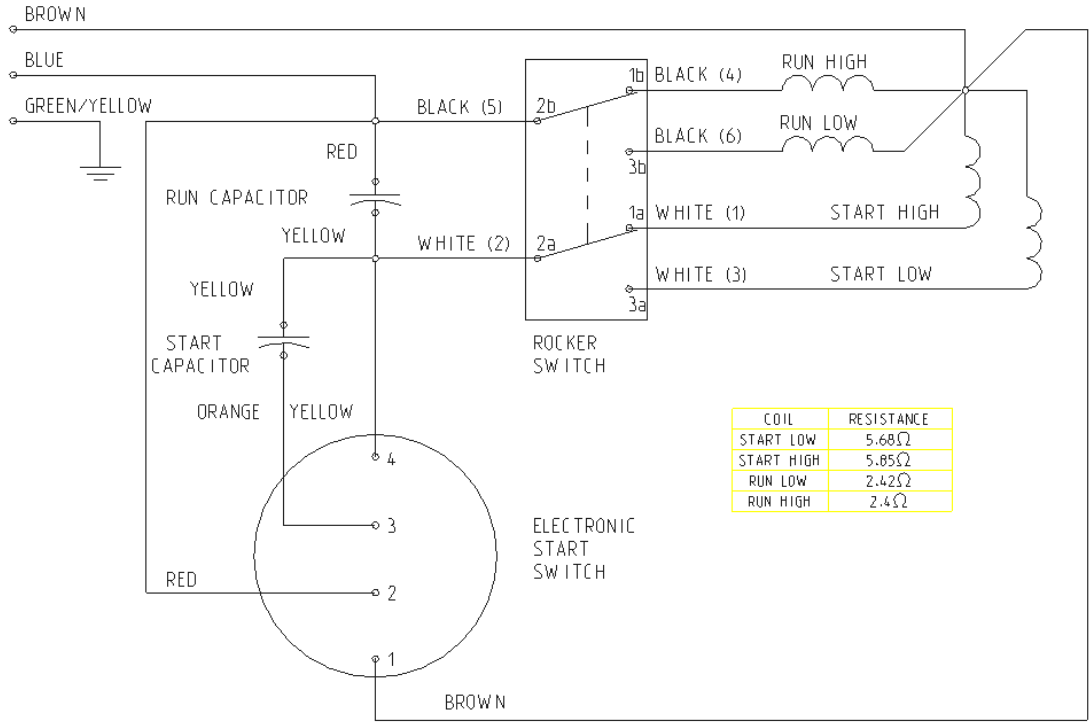
Select low speed on the switch and repeat the above steps.

Measure the resistance between terminal 2 and 3.

Note: The resistance between terminal 2 (3) and 1 (4) should be the sum of the resistance of the start and run winding.

Set the multimeter to capacitance. Measure the value between terminals 3 and 4. Compare this value to 125 MFD. Measure the capacitance between terminal 4 and the blue wire on the inlet. Compare this value against 23 MFD.





RUNNING TEST

Electronic Start Switch

Reconnect the connector to the motor inlet. Connect the electric cable to an electrical source.

Set the speed switch to low speed. Start the motor. Measure voltage between terminals 2 and 3. The value should be equal to the source voltage. Measure the voltage between terminal 1 and 4. It should be greater than 300V.

the switch must be in the circuit. When 1st started, there should be no voltage between terminal 2 and 3 since the switch is on. Once the machine is at speed the voltage will appear on 2 and 3 since the switch is off.

Terminals 1 and 4 are the sense terminals. If the voltage on these terminals do not reach 260V, the switch will not turn off.

Repeat this step in the high speed setting.

these devices Electronic Start Switch in general do not turn on so the motor will not start just as though there is a bad start capacitor, but this is very rare - check continuity between terminal 2 and 3 from switch in Italy. It should be kΩ or the triac is shorted.

Load Test.

For this test to be valid the conditions must be controlled. Please refer to the Typical Load Chart.

Construct conditions for both the low and high speed load test.

Install the clamp-on ammeter to either the brown or blue wires at the motor inlet. Start the machine in the speed matching the condition and measure the amperage. Compare against the value on the chart.

Reset the condition for the opposite speed and repeat.