# Newgy Technical Bulletin #5
## 'Controller turns off when connected to robot'
### September 15, 2010

Newgy Industries has become aware of a particular failure mode affecting some digital robots. The affected robots will cause their control boxes to appear to turn off and remain off when connected to the robot via the supplied Connector Cable. Disconnecting the control box from the robot will cause the Control Box to immediately reboot.

If a customer complains of a control box with no power, a simple test sequence can determine if the robot is affected by this problem;

1. Have the customer connect the digital control box to electrical power prior to connecting it to the robot body with the connector cable
2. Ask if the controller box has powered on normally, and reported a normal voltage (14.5 to 15.5 volts) on its startup screen. If it has, continue to step 3. If it does not power on, it is unlikely to be experiencing this type of failure.
3. Request the customer connect the connector cable to the robot, and then to the control box while observing the control box LCD panel.

If the control box LCD immediately goes blank when connection is made you have confirmed the presence of this issue. Any other result indicates a unrelated issue.
Further confirmation can be achieved by testing for continuity between the servo's 5V+ and ground wires using a multimeter set for continuity or resistance.

1. Disconnect the robot from the gray connector cable
2. Using a multi-meter, check for resistance between the highlighted R and B solder joints on the 5 pin connector PCB (key #89, Figure F, page 5 of Owner's Manual)
   http://Newgy.com/docs/cms/instmanuals/Newgy_Robo_Pong_1050_2050_Manual.pdf
3. Resistance should be infinite. Affected robots will show <500 ohm.
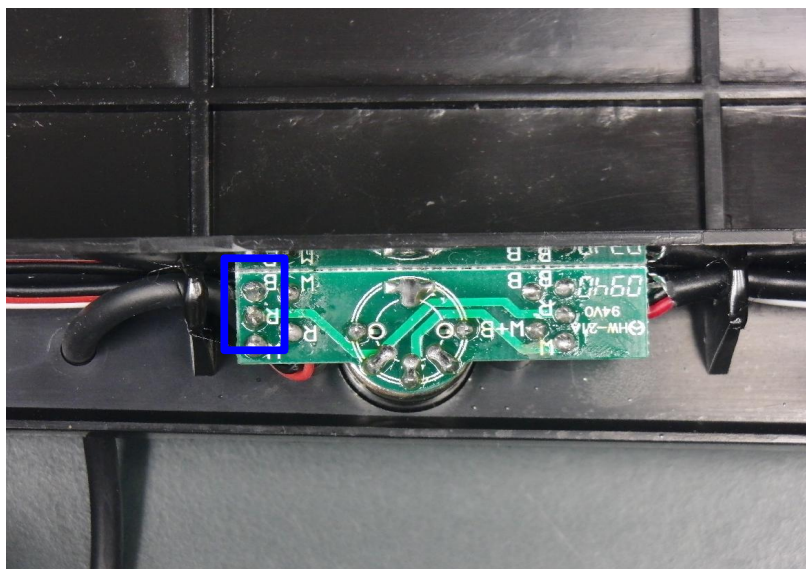
This condition is caused by a failure of an internal component of the oscillation servo (part no. 2050-209). This failure causes high current condition on the Control boxes 5v+ rail, resulting in a 'brown out' on the control box and the micro controller entering safe mode. It is not possible for the control box to exit this mode while connected to a affected robot, although the control box is not damaged. Repair requires the complete replacement of the servo. It is not practical to repair the damaged servo, and affected units should be disposed of when identified.

Consult the *Digital Robot Owners Manual* for exploded diagrams and disassembly procedures, beginning on page 44.

When replacing the servo, the servo drive pin, key #83, Figure B, page 44,  may be reused. Care must be taken to correctly align the drive pin on the servo and then later calibrated to ensure precise oscillation alignment (page 12).