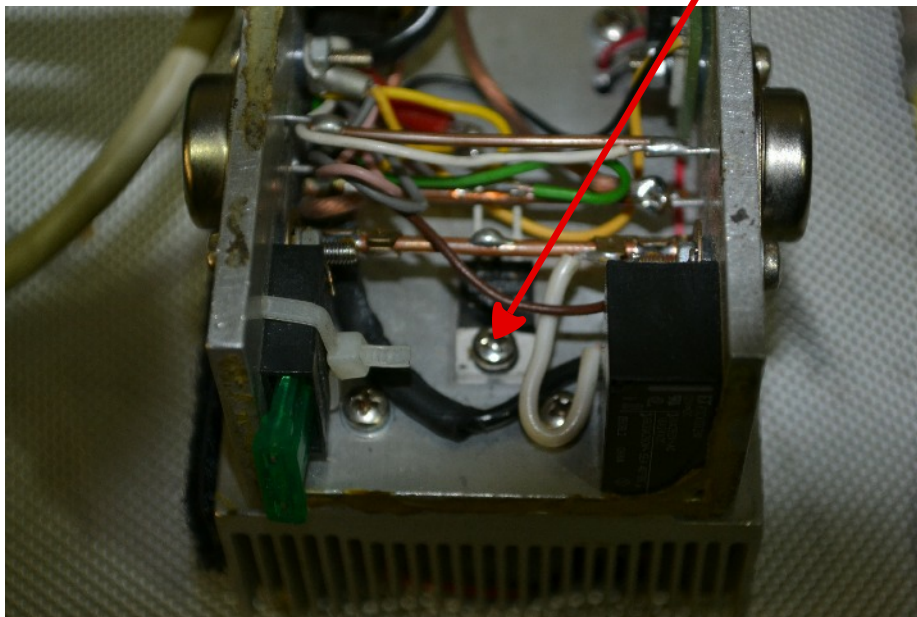
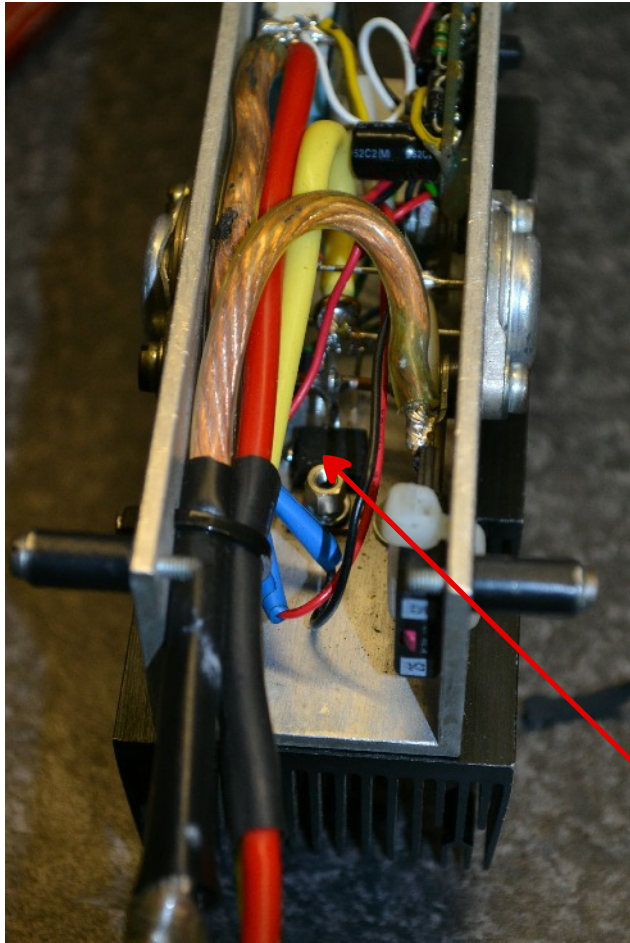


## Fault Finding on Pro controllers

There are 3 common faults that may occur when using a Pro type controller. These instructions refer to Pro 2's and Pro 3 types.



The two photos above show the location of the Schottky diode in the Pro 2 (top pic) and the SK version of the Pro 3 controller. In most versions of the Pro 3 controller they can be found in the bottom of the box as shown. Later versions may be side mounted, but they always bridge the copper connecting bars between the two transistors.

1) Controller has intermittent faults including loss of brakes, loss of power control.

Generally this is caused by a break in the cable between the handle and the box. Often the cable will fracture just below the handle which is the typical stress point. Often if you manipulate the cable at this point the faults may disappear or get worse. If this is the case, replace the Cable. Cable kits are available from AB Slotsport. Wires are colour coded so when replacing the cable ensure you replace one cable at a time at each end, this will ensure you don't get it wrong!

2) Controller "feels" gritty and power is intermittent. This is generally because the Carbon wiper has fallen off the wiper blade or has worn out. Replacing this is easy but does require "method". [Please refer to the separate AB Slotsport download "Carbon Controller wipers making and replacing"](#)

3) Controller goes "almost full power" with touching the trigger.

Fault :- The Schottky Diode is faulty !  
(This is often confused with a transistor failure, but we have never had transistors fail on Pro controllers). This diode is fitted to protect the transistors from reverse connection, however if stressed , it may go open circuit and create the fault.

Schottky Diode

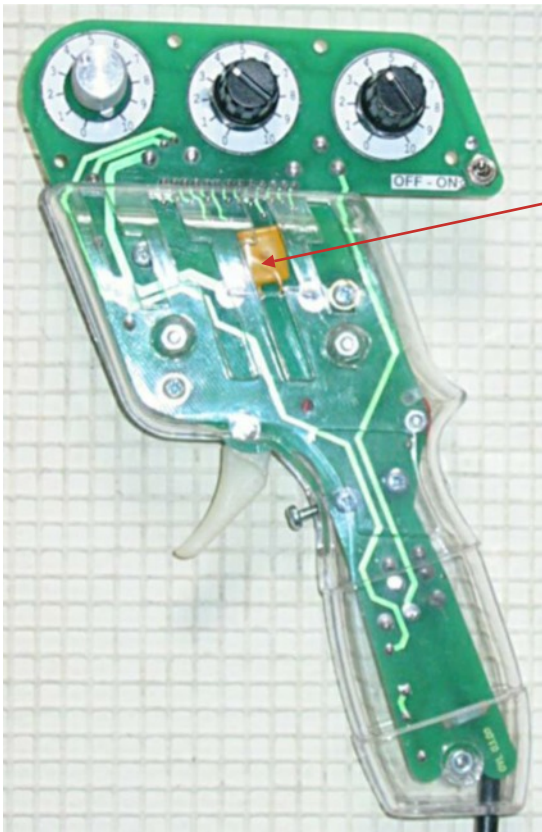
There is a simple way of testing if the Schottky diode has failed.

These are fitted in all Pro controllers and look like a small black square with an aluminium heat sink attached which is bolted to the base or side of the control box. There are three connections from the diode to the copper bars which bridge the two transistors. Cut these 3 connections from the diode and the controller should operate correctly (but without reverse connection protection).

Simply replace the diode, ensuring you reconnect the new diode correctly.

The current replacement diode is MULTICOMP - MBR2045CT - DIODE, SCHOTTKY, 20A, 45V . Usually available from AB Slotsport.

Common faults on Pro controllers re brakes. 1;- the flexi wire between the circuit board and the trigger. This can fracture. There are 2 wires going to the trigger, one is power is the other is brake. When you replace these, don't mix them up! 2. The cable between the handle and the box;- this can start to fracture just below the handle, this is often the case if the controller is stored badly with the cable tightly kinked or just under heavy use. Check the continuity of all conductors in the cable and replace if necessary. 3) the little flexi wire on the brake pot may fracture, check and replace. 4. the "inline fuse" on the back of the controller board (like a metal strip between 2 points on the board) this can become unstable and increase in resistance, especially if it has been in close proximity to acid flux fumes. Check resistance across the fuse and if it is more than around 0.2 of an ohm, change it. and finally it always helps to clean the brake contacts between the trigger and the circuit board, these can become oxidised over time and also check the trigger is coming back positively against it's contact.



This is the brake resettable fuse. This is the more modern type, earlier controllers have a metal strip type fuse which is more likely to be sensitive to resistance gains. A replacement for this is;- multifuse BOURNS MF-R185 , available from RS or Farnell.