

**Dedicated to supplying the Best Slot Racing Products to Racers Worldwide**

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## DIODE BRAKING KIT

Why Diode brakes??

Conventional adjustable brakes on the majority of controllers are varied by resistance, that is to say, a resistance is introduced into the circuit and this lessens the EMF value that the motor generates under braking in line with the resistance value selected and causes the car to brake with proportionally less braking effort all the way to the car becoming stationary.

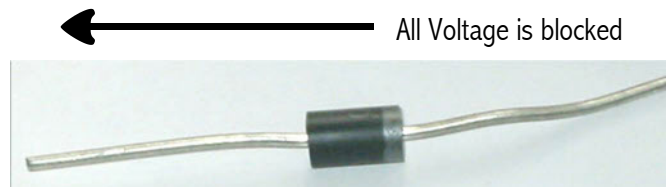
Diode brakes however work differently. Diodes work differently in each direction. In one direction the diode will completely block voltage. In the other direction the diode will allow voltage to pass but typically with a voltage drop of between 0.4 and 0.6 of a volt. So the more diodes that are dialled into the circuit, the more EMF voltage generated by the motor under braking is blocked, hence less brakes.

But that is not the end of the story, dependant on the diode setting, the system will give FULL brakes until the point where the diode setting voltage drop equals that of the reducing EMF produced as the motor slows under braking. Once the EMF voltage drops with the speed of the car and equals that of the diode voltage blocking setting, the car will "Roll On", making for a smoother driving style. So the more diodes that are dialled into the circuit, the "Roll On" effect will kick in at a higher speed.



The AB Diode Brake kit comprises of a high quality gold over silver switch contacts with 10 positions and 8 diodes. The diodes must be arranged in the correct direction to give voltage drop, Not total voltage blocking.

All diodes are marked with a silver ring to indicate polarity.



← All Voltage is blocked

→ Reduced voltage will pass

Connecting to the Braking circuit. Connections **A** & **B**

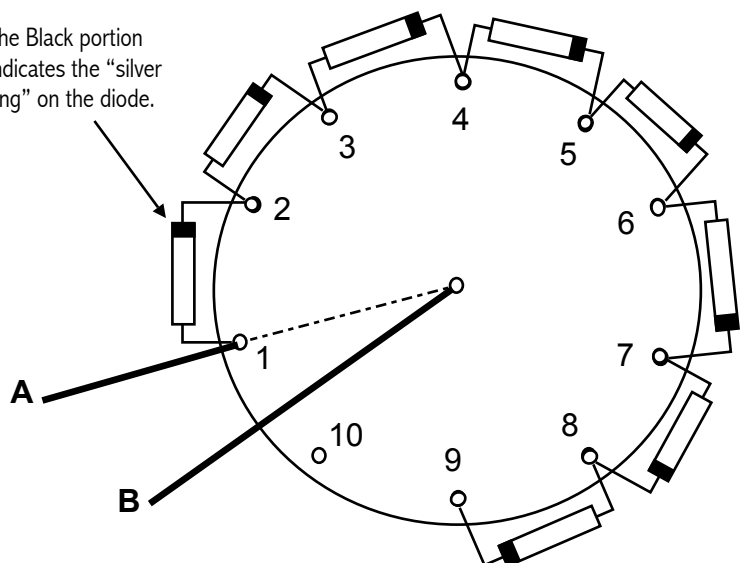
If you are replacing a "resistor type pot" Hook to the existing brake pot contacts. **A** should connect to the terminal originating from the Brake contact on the controller board . **B** should connect to the other connection/terminal.

If you are installing this to a controller with no adjustable brake feature. You must first remove the Brake cable from the "brake contact" on the controller frame.

Connection **A** (from terminal 1) connects to the Brake contact on the controller frame. Connection **B** hooks to the the Brake Cable which eventually goes to the track.

If you test and have no brakes at all when the brake is set to maximum brake, just reverse connections **A** & **B**. Position 1 is maximum brakes, position 10 is NO Brakes at all.

The Black portion indicates the "silver ring" on the diode.



Terminal 10 is left unconnected. This will give a "NO BRAKES" position on the last click of the switch. Insert the "Stop Rod" into the switch between positions 10 & 1 (see switch instructions).