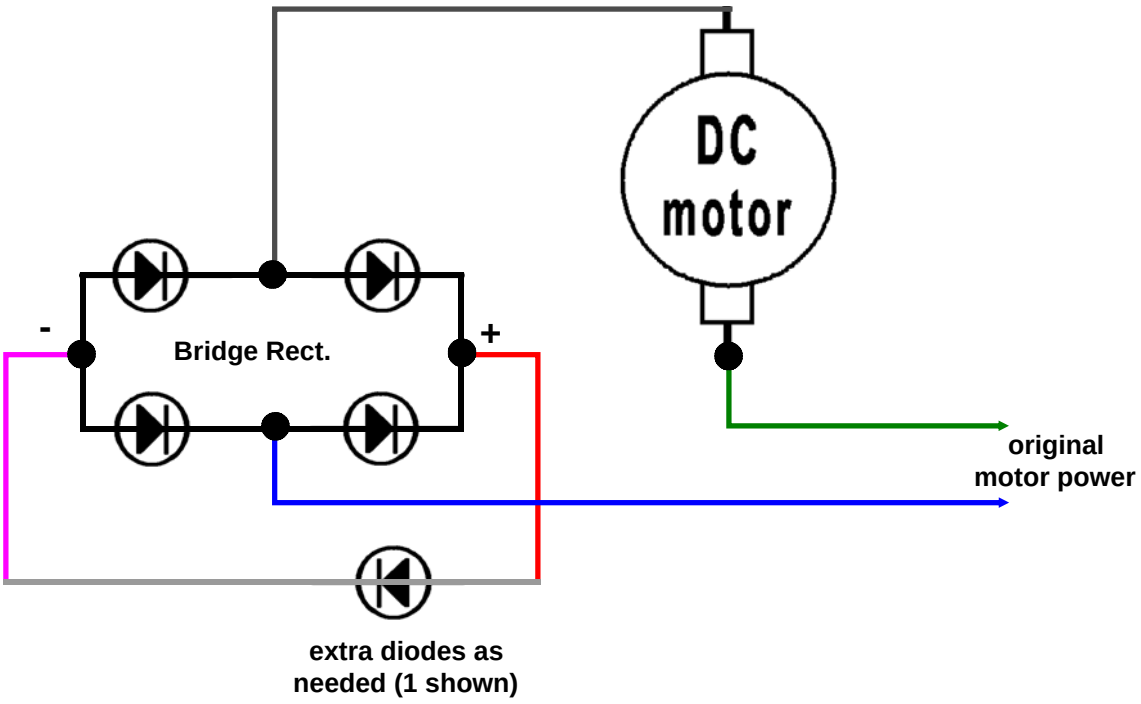
Dropping existing Motor Voltage in an Engine



Dropping a fixed voltage to an existing motor is simply done via the use of a bridge rectifier and / or several diodes. This is better than resistor dropping since the voltage drop is a near constant with the changes in motor load. The current rating of the bridge rectifier and diodes should be high enough to carry the stalled motor current to prevent burnout during derailments.

The simplest, and least voltage drop encompasses only using 1 bridge rectifier and shorting the "+" to "-" of the bridge rectifier. This will yield 2 diode drops to the motor. For most diodes this will be 0.7 volts. Power diodes will drop approximately 1.1 volt per diode. So a 2 diode drop will be roughly 2 volts in drop from the "original motor power" to the existing DC motor (while a DC motor is shown, this also works for an AC series motor).

To obtain more diode drops, merely place more diodes in series between the "+" and "-" leads of the bridge rectifier.

Colors are only used to signify different wire connections. They do not represent the color of wires that may be present in the existing locomotive. Black dots denote connections, otherwise the wires are merely passing over one another.

See the Dallee Electronics, Inc. price schedule for a range of bridge rectifiers and diodes to select from.