ALTERNATOR THEORY

Alternator theory is there only needs to be a initial shot of 12 volts to initialize the alternator into operation.... After the initial shot of voltage the alternator (generating electricity process) should be self sustaining....

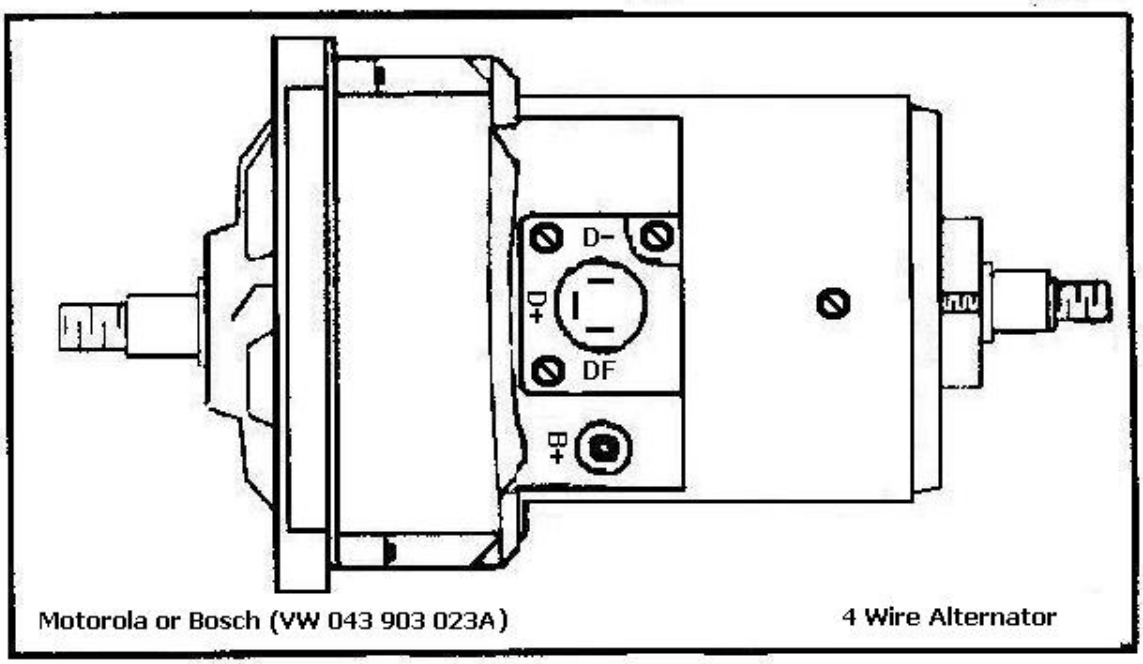
An idiot lamp wired to D+ terminal excites the alternator. Why Idiot lamp is first lit when you turn the key on is because there is a GROUND potential on D+ terminal of alternator (from regulator circuit) and it grounds the idiot lamp circuit. As you spin up alternator it takes the initial excitation charge of 12 volts through idiot lamp circuit and cause alternator to start functioning. As alternator at startup up begins to function the ground on D+ terminal transitions from ground to +12 volts dc and cause idiot lamp to go out because you now have 12 volts standing on both sides of lamp and there is no current flow....

So most any lamp hooked to one side at 12 volts (controlled by ignition switch) and other side to D+ terminal of alternator (or external regulator) should be sufficient to initiate alternator operation. The danger of to big a lamp or resistor in line is you can cause a condition called "run on" where the output on D+ terminal (through lamp or resistor) is actually strong enough to "back feed" ignition system and when you turn key off the engine continues to run and only way to stop it is pull wire off D+ terminal...

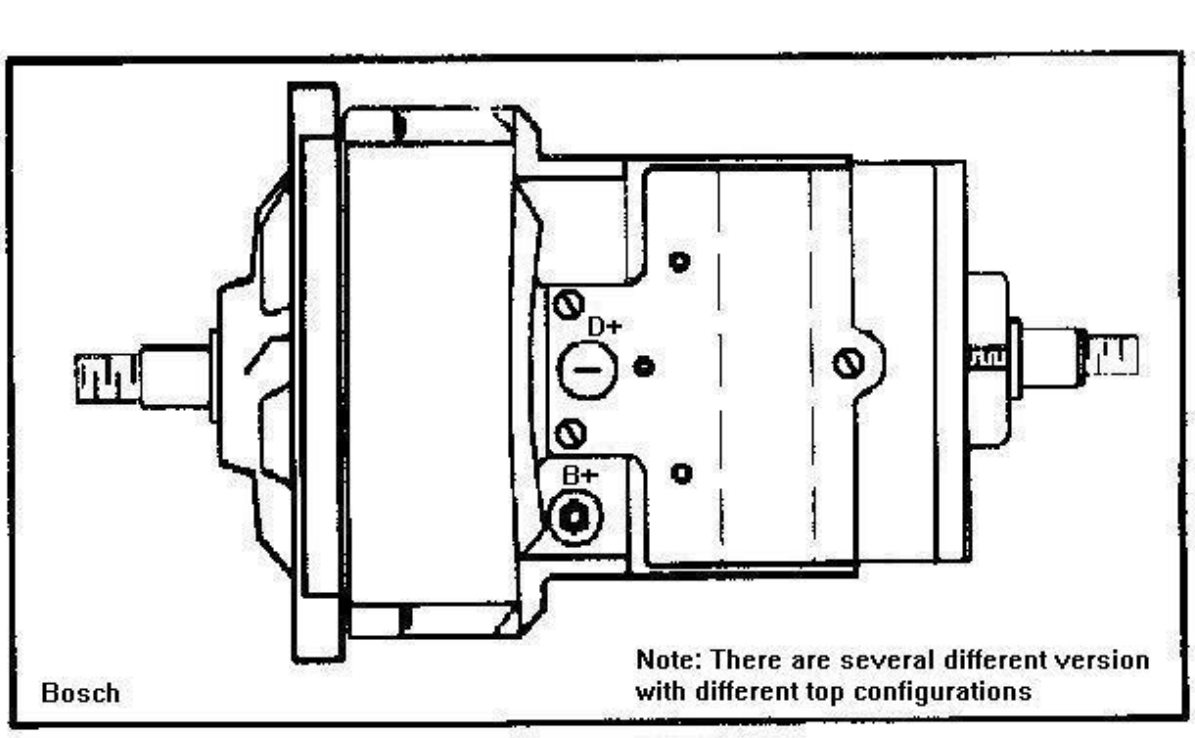
Some times all you need to do is rev motor above about 2000rpm to get system to initialize (if everything is electrically good) .... Bosch AL82 alternators are stubborn about this... At first it appears they will not work but a quick throttle blip initializes them... Think it had to do at idle speed (especially if you have "power pulley") it does not spin alternator fast enough to initialize...

So in the end all the larger bulbs and resistors really do not help... The little tiny bulb found in speedometer it essentially enough.... OR if you have run-on condition, a diode in circuit might be the cure.

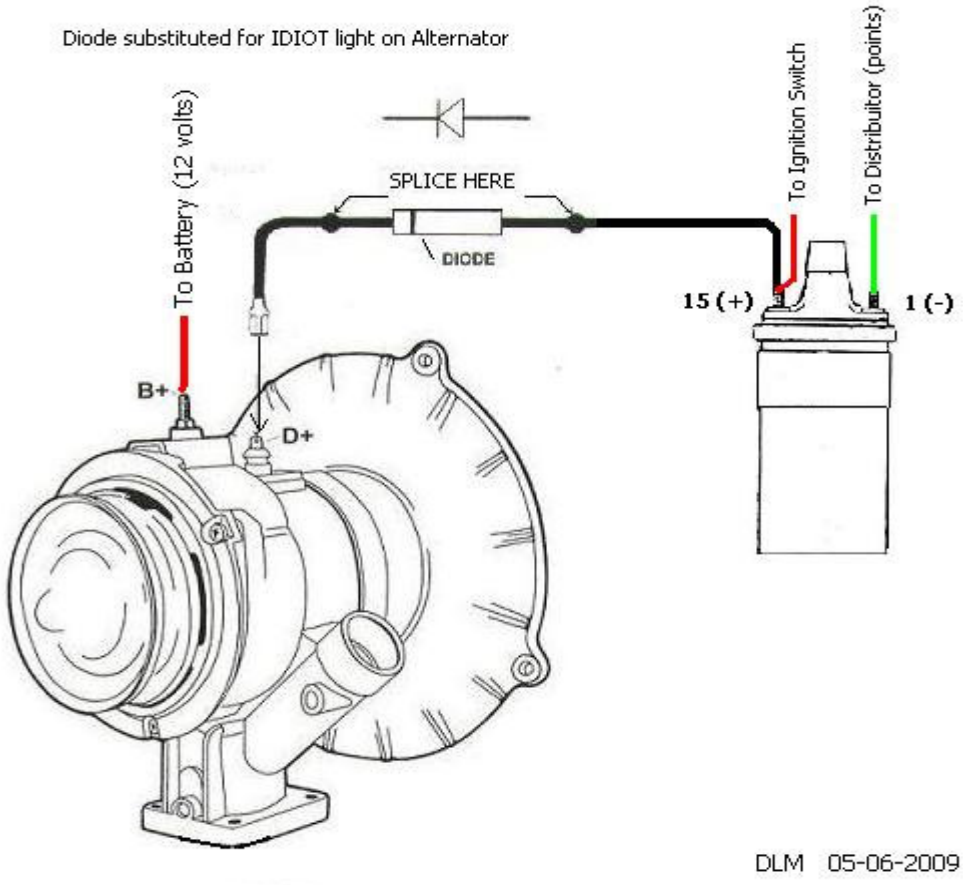
Alternator Basics
Alternator Identification.

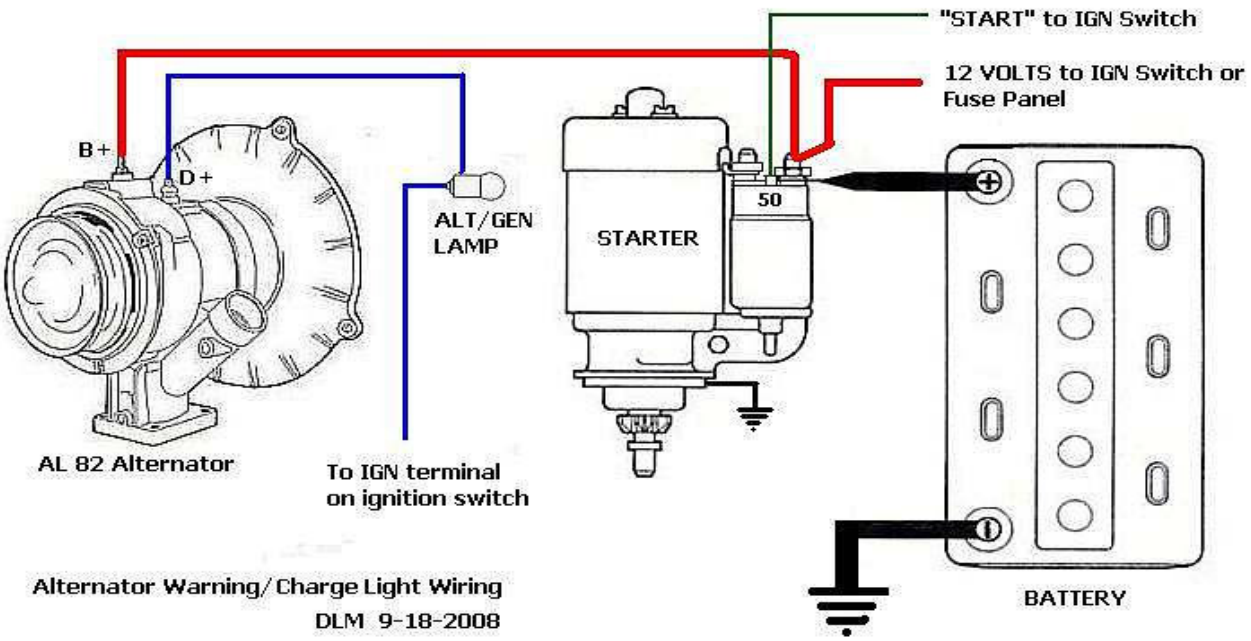


AL78X



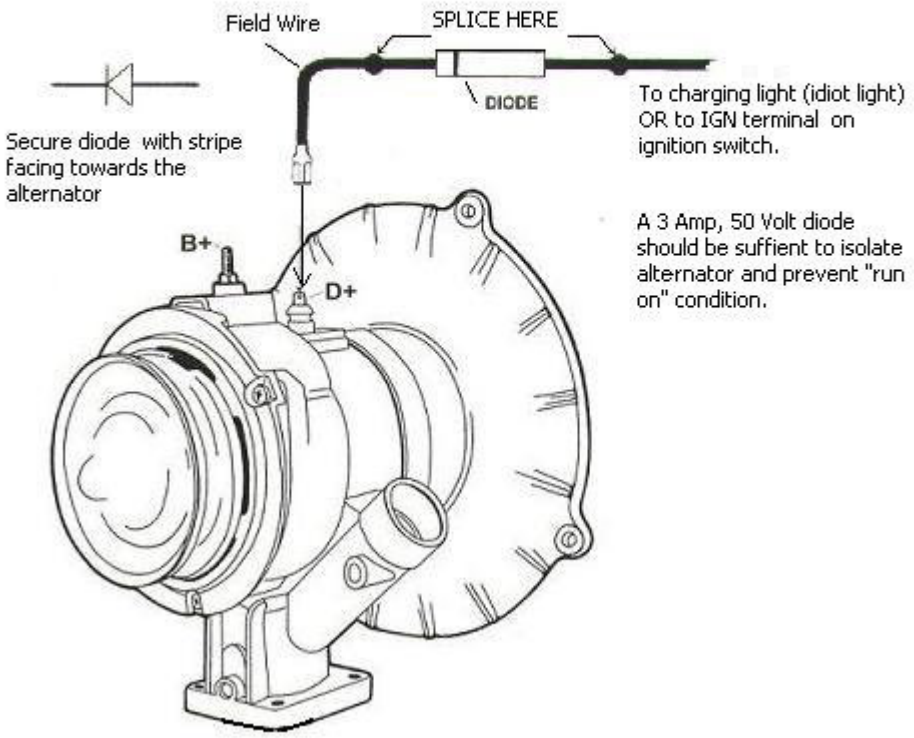
AL 82X

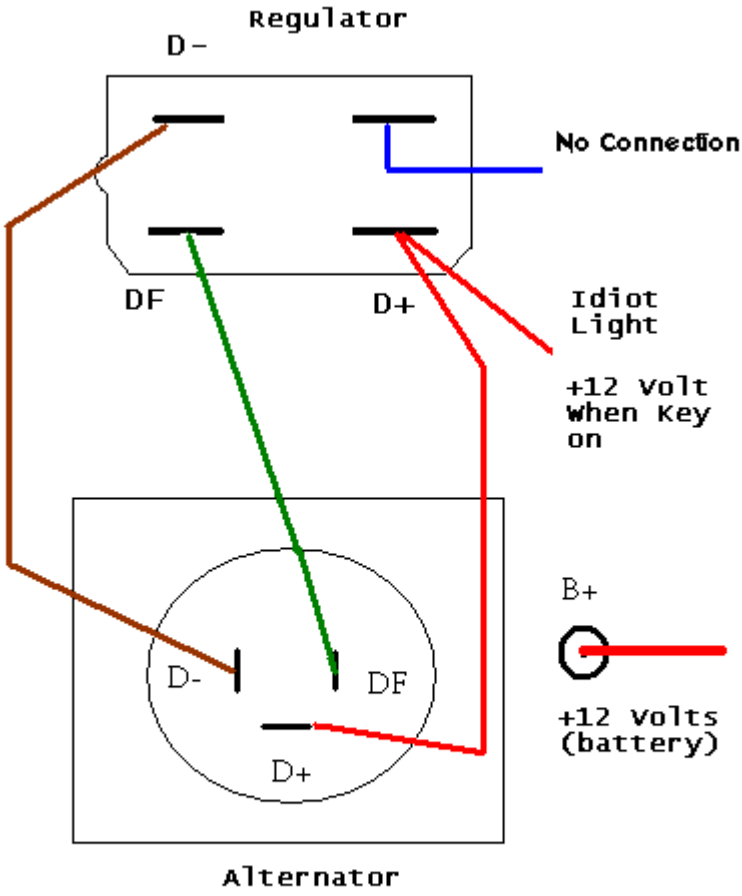

Diode substituted for IDIOT light on Alternator
To Battery (12 volts)
SPLICE HERE
DIODE
To Ignition Switch
To Distributor (points)
15 (+)
1 (-)
B+
D+
DLM 05-06-2009


"START" to IGN Switch
12 VOLTS to IGN Switch or Fuse Panel
B+
D+
ALT/GEN LAMP
STARTER
50
AL 82 Alternator
To IGN terminal on ignition switch
BATTERY
Alternator Warning/ Charge Light Wiring
DLM 9-18-2008

Engine Run On

In some applications a situation referred to as "run-on" will occur. This is when the engine continued to run after the ignition switch is shut off. In a run on situation a diode can be put in line with alternator field wire. This diode will keep voltage from leaking through to ignition system.





Motorola 4 wire alternator/regulator wiring.

Revised 05-06-2006