



HEADLIGHT AND TAILLIGHT RELAY UPGRADE

CONTRIBUTED BY CURT SPRENGER AND JOHN FINN

THERE ARE TWO HEADLIGHT UPGRADE DIAGRAM VERSIONS HERE. THE FIRST IS A TWO RELAY WIRING DIAGRAM AND THE SECOND IS A FOUR RELAY VERSION, EITHER ONE WILL WORK, IT DEPENDS ON YOUR PREFERENCE

This method replaces the bulb's power with heavy wiring & relays. The original wiring under the dash remains untouched.

You will need two of these Bosch Relays for this Conversion. Any Good parts house can get them for you. The Heavy Duty 75 amp version is best, maybe overkill. The smaller 20/30 amp relay will work well in most cases.

Test the voltage at the lights with the engine running. Record that information for later.

Turn on the lights & use a test light to find out which color wire goes to which bulb terminal. Write down which is high beam & which is low beam. The dash indicator determines this later.

Cut the wires going to the headlight bulbs & reroute them to each Bosch Relay's terminal #85. Ground each relay's terminal #86. This makes the headlight & dimmer switches control the relay with a very low current draw.

Turn on the lights & operate the dimmer switch. You should hear clicking noises from the relays. Watch the dash indicator & leave the lights on high beam. Use a test light to see which relay is on. Mark this relay "High beam." (You should already know which relay is high beam if you wrote the wire colors down first).

Use 12 gauge wires for the "High Beam" circuit & 14 gauge wires for "Low Beam", or all 12 gauge wire. Use non-insulated terminals & heat shrink tubing on all connections.

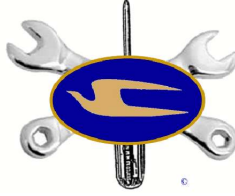
Connect a 12 gauge wire to terminal #30 of each Bosch Relay. Route the 12 gauge wire to a point with battery power. Use some kind of junction block & it should be powered by a 10 gauge wire from the battery "positive post". A battery terminal may have to be purchased to enable the 10 gauge wire to attach to the battery itself. Install a resettable 30 amp circuit breaker close to the battery inline of the 10 gauge wire. An alternate method is to tap onto the big wire going to the starter terminal. Do not power up the 10 gauge wire before the relay end is completed.

Run the wire for each circuit from each relay's terminal #87 to the head lamp Connectors. The best way is to remove the old wires from the bulb sockets by pushing in the tab "ear" from the side to get the

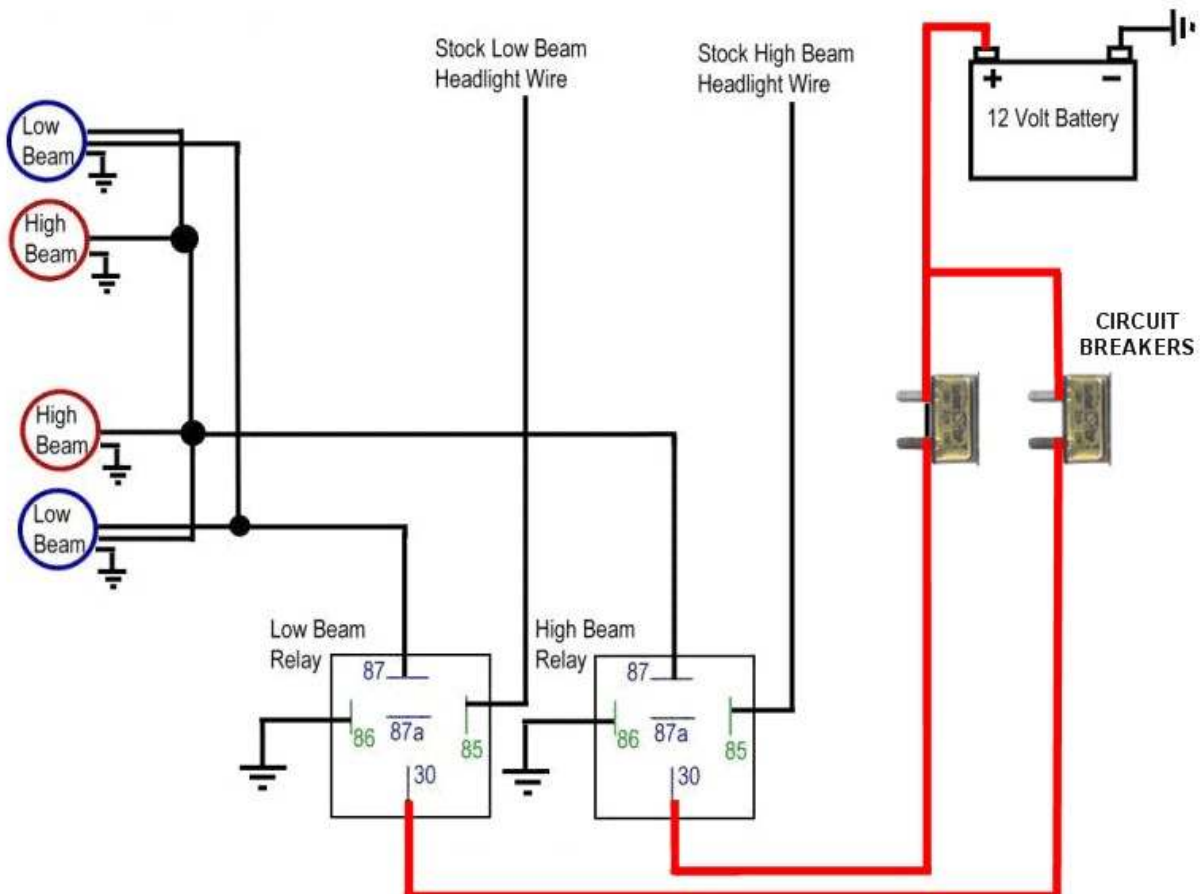
connector out. On some sockets, you will need a skinny tool pushed down along the terminal from the front of the socket to push down the tab. Solder the high/low wires to the connectors.

Replace the ground wires with 12 gauge while you're at it. This avoids the splice at the bulb socket. Be sure which terminal is what before tearing them apart. Solder the wires together at the bulb, & run the set to the other light bulb. Split the wiring somewhere to feed the two sides. Determine the best way to route them.

Connect the 10 gauge wire to the 12V power source. Test the voltage at the lights with the engine running. Compare the readings to those taken at the beginning of this document. Reading should be at or above 14 volts.



TWO RELAY DIAGRAM





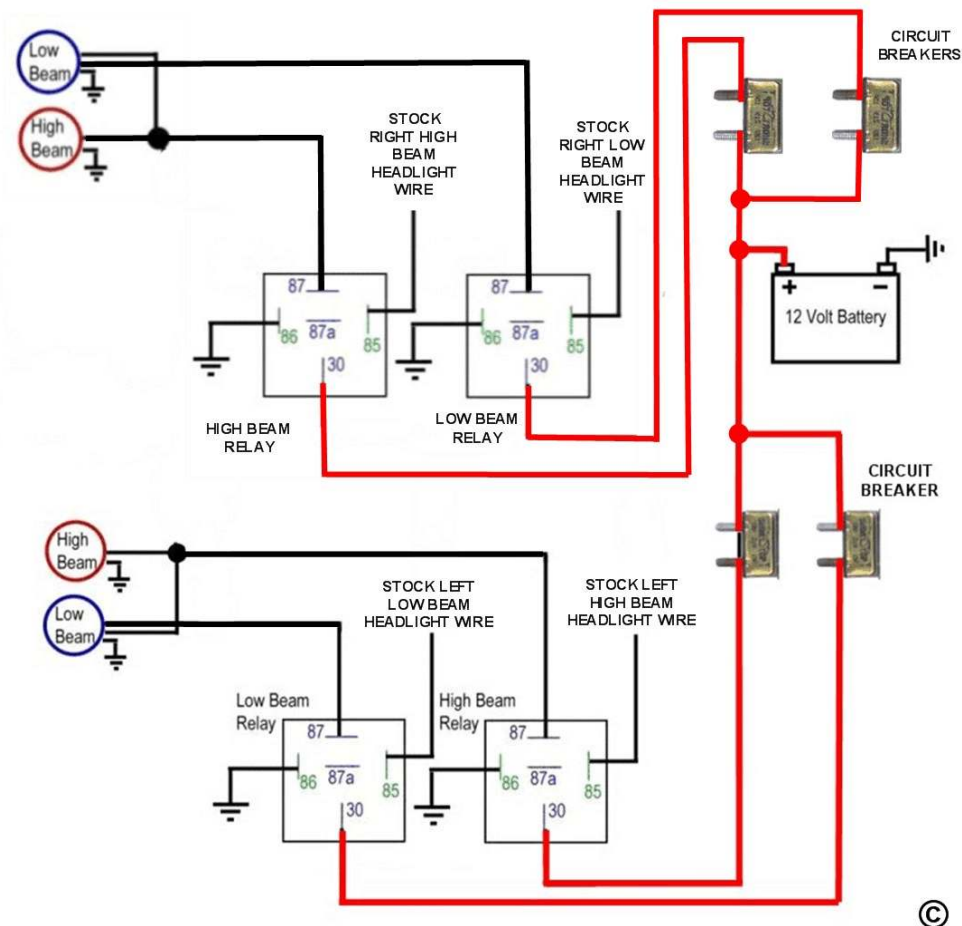
FOUR RELAY DIAGRAM



HEADLIGHT UPGRADE USING FOUR CIRCUIT BREAKERS AND FOUR RELAYS

TO SOME PEOPLE THIS MAY SEEM TO BE OVERKILL, BUT IT IS THE WAY THAT I CHOSE TO WIRE MINE. THIS IS BASICALLY WIRED THE SAME WAY AS THE TWO CIRCUIT BREAKER TWO RELAY VERSION, BUT JUST DOUBLED. THE ADVANTAGE OF THIS VERSION IS THAT EACH INDIVIDUAL LIGHT BULB IS INDEPENDENT FROM THE OTHERS AND GIVES YOU LESS OF A CHANCE OF LOOSING ALL OF YOUR HEADLIGHTS, IF THERE IS A SHORT.

JOHN FINN
'82 35FCRB

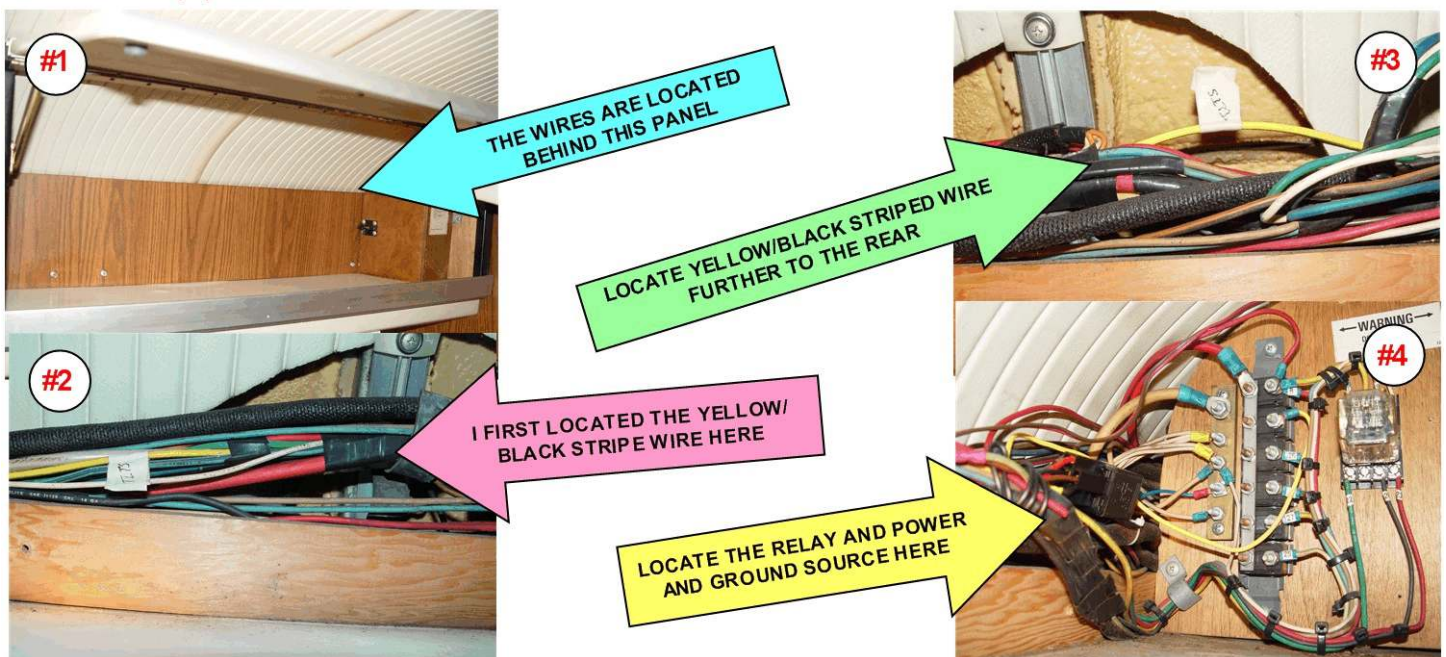




TAILLIGHT RELAY UPGRADE

REAR TAILLIGHT RELAY UPGRADE

MANY OF YOU HAVE FOUND THAT THE TAILLIGHTS ON YOUR 'BIRD CAN BE LACKING IN BRIGHTNESS, SO AFTER READING HOW GARY MILLER RESOLVED THIS ISSUE AND DOING THE PRIOR UPGRADE TO THE REFLECTOR ON EACH TAILLIGHT, I DECIDED TO TRY THE CURE ON MY '82 35FCRB MODEL 'BIRD, IT WAS AN EASY JOB TO DO, AFTER I FOUND THE CORRECT WIRE AND AS GARY HAD MENTIONED THERE WAS JUST ONE WIRE, A YELLOW WITH BLACK STRIPE WIRE, THAT SUPPLIED THE POWER TO THE TAILLIGHTS AND THE TRAILER TAILLIGHTS PLUG TOO, THIS WILL GREATLY AFFECT NOT ONLY THE TAILLIGHTS ON THE 'BIRD, BUT IF YOU PULL A TOAD, OR A TRAILER AND USE THE TRAILER PLUG, IT WILL MAKE THEIR TAILLIGHTS BRIGHTER TOO. I FOUND THE YELLOW AND BLACK STRIPED TAILLIGHT WIRE AFTER I FIRST REMOVED THE ITEMS THAT WERE STORED IN THE BEDROOM CURBSIDE OVERHEAD COMPARTMENT IN MY REAR BATH MODEL, (#1) I THEN REMOVED THE PANEL (2 SCREWS) THAT COVERS THE WIRES AND STARTED LOOKING FOR THE WIRE. (#2) IT WAS LOCATED (NOTE THE TAPE LABEL) JUST FORWARD OF THE METAL CRADLE THAT SUPPORTS THE MANY WIRES THAT PASS THROUGH THERE. I TESTED THE WIRE WITH A TEST LIGHT, AFTER TURNING ON THE HEADLIGHT SWITCH ON THE DASH, THAT AREA WHERE I FIRST FOUND THE WIRE IS A LITTLE TIGHT TO WORK IN, SO I FOLLOWED THE SAME WIRE BUNDLE FURTHER TO THE REAR AND FOUND THAT IT WAS WRAPPED IN BLACK TAPE, SO I UNWRAPPED THE BUNDLE (#3) LOCATED AND RETESTED THE YELLOW/ WITH BLACK STRIPE WIRE. I THEN CUT THE WIRE AND SPLICED IN A BOSCH 30AMP RELAY, USING THE ALREADY AVAILABLE POWER AND GROUND SOURCES (#4) LOCATED IN THE CIRCUIT BREAKER COMPARTMENT LOCATED AT THE REAR OF THAT OVERHEAD COMPARTMENT.



For a better version of the above photo, go to;

<http://www.pbase.com/iamflagman/image/50381811>