

# THE ART OF WIRING YOUR BUG

Replacing the factory harness in a 1967 sedan

BY DEAN KIRSTEN & DAVE CORMACK

There comes a time in every thirty-plus-year-old Volkswagen's life when the original wiring components need replacing. And even though things may seem to be working fine, take a moment and look at the wires in your engine compartment. If they are stiff, hard as a rock, frayed, or the plastic coating has disappeared and exposed bare wires, it's time to address this potential problem before it creates a real headache (if not a fire!). Rewiring a 1967 Beetle is not that difficult, — physically. It can, however, be a mental quagmire if you start with a spool of black wire, and attempt to redo what the factory did without some sort of game plan (or factory wiring diagram). If you plan to rewire your Bug correctly, there are factory-look-alike harness kits available, color-coded to mirror the original look and function.

So, when is the best time to rewire your car? Probably the opportune time would be just after having it completely painted, before reassembling the car. Trying to replace the wiring in a complete, running driving car would be one heck of a lot of work (since you have to pull the engine, remove all the seats, lift up much of the carpeting on the driver's side of the car, and remove the gas tank). Doing it while the car is nearly stripped would be a much better plan of attack.

For years, we have been kicking around the idea of doing a wiring story. So when we spotted Chris Morley's freshly painted stock '67 sedan that was ready to go back together, we saw a great opportunity to do this hands-on how-to article. Since all of this car's original wiring was still intact, it looked to be a good stock replacement story. So, we had Chris bring the car to our office, and then called The Real Source for a complete wiring harness and a number of related needed items. With that, we got busy!

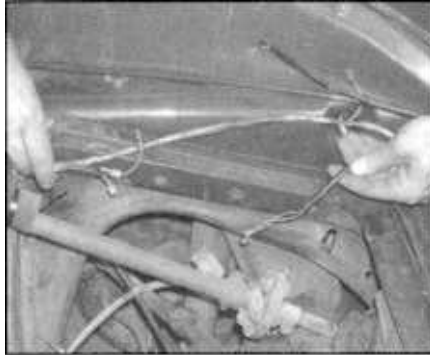
When you receive your wiring harness package from The Real Source, take a good long look at the enclosed instructions



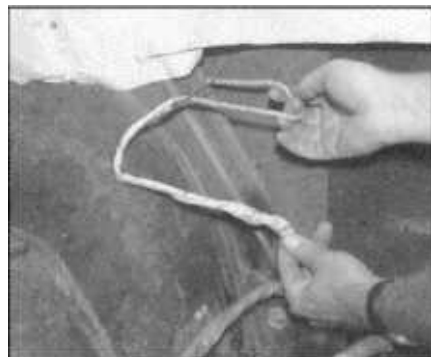
Complete wiring harness for the 1967 VW sedan came from The Real Source, along with new switches, lenses and turn signal lever.

and read them! The kit's manufacturer, Wiring Works, does a great job making this task straightforward. It may take a few laps around the wiring diagram to fully understand it, but 98% of the information is there. The other 2% we, hopefully, will shed some light on in this article.

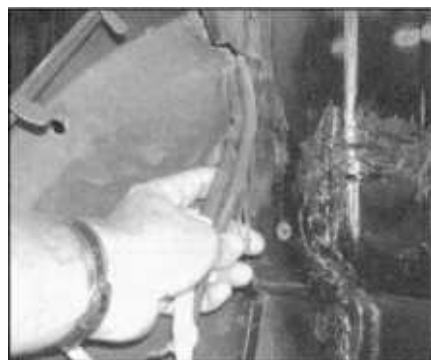
The number one item that Wiring Works' instructions talk about doing before installing the new harness, is correctly removing the old one! And if you follow their instructions, and tie a 1/4-inch rope to the end of each



This is what we started with; all original factory wiring, but in sad shape. Morley's car still had the original-style flasher unit and so-called "black box" (sometimes blue) relay system. ABOVE CENTER, front left side wiring harness not only attaches to the horn and brake light switches, but also the left headlight and turn signal (park light as well). Some of this loom goes under the gas tank, while the rest rides inside the trunk and through the left splash panel. ABOVE RIGHT, removal of the main harness requires that the carpeting on the driver's side be removed, as this loom passes behind it.



Underneath the carpeting, on the left threshold, lies the main wiring harness. It is held in place with a series of special clips and, of course, the carpeting. ABOVE CENTER, main harness then attaches to the voltage regulator (under the rear seat) and through the rear quarter panel cavity. Original voltage regulator was in sad shape, so we replaced it with a fresh one. ABOVE RIGHT, before pulling the harness out the rear of the car, attach a rope to the end (cover it with tape). This will help make pulling the new harness back through much easier, and save hours of hassle.



As you pull the old harness out the rear, the guide rope will follow, leaving a tool to install the new one. ABOVE CENTER, taking the new harness in hand, we wrapped the loose ends with tape, and attached the rope. Cover the knot with tape as well. ABOVE RIGHT, main harness on a 1967 Bug runs through this hidden access hole on the left side of the engine compartment. Once installed, this area is covered with tar boards, with the harness passing through a punched hole. Once installed, remove the tape and rope.

existing harness, as you remove them from the car, you will leave a way to pull the new harness into place without effort. If you skip this part, plan on spending hours trying to fish your new wiring loom in place.

Of all the VW rewiring jobs, the 1967 sedan is one of the easiest to tackle (early Ghia convertible and sunroof bus are the most difficult). With the car basically stripped, you should start by disconnecting the battery (if you haven't done so already). From the positive (+) lead of the battery, a heavy gauge red wire leads over the center hump to the (B+) terminal of the voltage regulator (one of five wires connected at this point). Remember this lead, as the wiring kit does not include this one, for some strange reason. The main harness runs

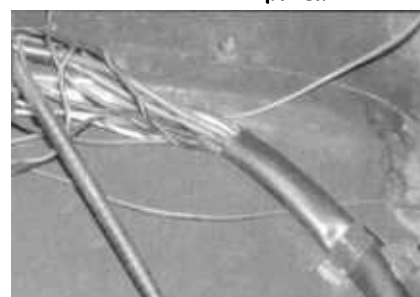
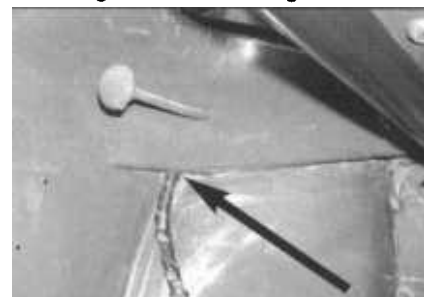
from under the dash, down behind the driver's side front quarter panel, into the interior (under the dash), down along the threshold, up to the voltage regulator (under the rear seat), up into the rear quarter panel, and into the engine compartment (top left-hand corner). To remove it, first attach a long length of 1/4-inch rope to the end found under the dash. As you begin pulling the harness from the inside of the car, the rope will follow (you may want to add some tape around the knot, and a light spray of silicone lubricant, to help it pass through the panels easier). Once the harness is up to the rear quarterpanel access point, you need to move to the engine compartment, and pull from there. Once out of the car, the rope should remain in its trail for future use.

Installing the main harness starts by wrapping the loose ends with electrical tape, so that the entire harness will pass smoothly through its passages. Start by attaching the forward end of the harness to the rear-most point of the rope, and by sitting in the rear seat area, pull it through the rear quarterpanel access point. From there, weave it around the voltage regulator, down the threshold, up the forward door pillar, and into the trunk area (behind the left hood hinge).

The left-front harness attaches to the main fuse panel, moves forward to the left headlight, brake master cylinder, and horn system. This harness passes through two different body holes which makes it a little tricky to route. Again, use a rope as you pull



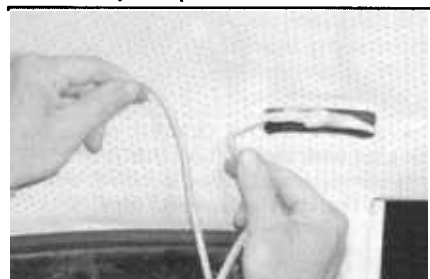
Main harness is pulled from the rear of the car forward. Here, the wires are pulled from the engine compartment through the rear quarter panel using a length of rope (tied and taped). ABOVE CENTER, harness then moves downward, through the lower channel and this access hole (reuse original rubber boot). Four of these wires connect to voltage regulator, with an additional large red wire coming from the (+) side of the battery (above right). The remaining wires continue forward to the main fuse panel.



Main harness runs along the driver's side threshold, then up through the lower channel, through a tight passage. ABOVE CENTER, harness runs through this access hole (which will be hidden with carpeting) — install a grommet to protect wires. ABOVE RIGHT, once in the trunk area, harness then jogs around the hood hinge, through these two tabs, and to the backside of the dash panel. Large black cable on the left is for the speedometer. Other two small wires are for the dome light, and door jamb switches.



Left-front wire harness drops down from the trunk area, through the lower bulkhead (to clear the gas tank), then forward once again to the brake master cylinder and horn. ABOVE CENTER, there are two wires going to the master cylinder (both black-red). Each wire has two connectors (+ and -) — connect one to each brake switch terminal. ABOVE RIGHT, horn wires go through the left-front splash panel, and down to the horn connection. Wires are brown (ground to steering column tube) and black-yellow.



Before you remove the old dome light wire, attach a length of rope to the end (tie a knot and tape over it). As you pull the wire out the front of the car, the rope will follow, allowing you to have a guide for the new wire. ABOVE CENTER, insert the turn signal wires into the rubber boot first, before installing the light assembly. ABOVE RIGHT, turn signal lever assembly installs with the steering wheel removed. Wire loom goes through this small access hole. Solid brown wire attaches to #31 on wiper motor switch or ground blade on speedo mounting screw post.

the old harness out of the car. The other tricky area is the dome light harness, since it travels up the driver's side "A" pillar (totally hidden). Using a section of rope behind the old wires, and pulling them through the light socket and down into the trunk area, will make your replacement task that much easier.

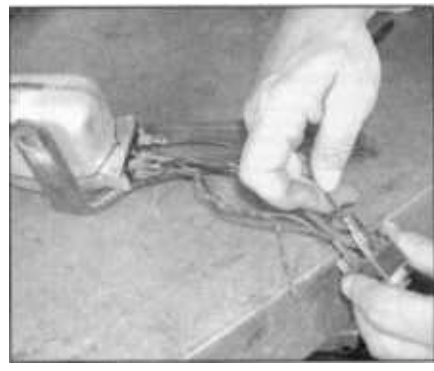
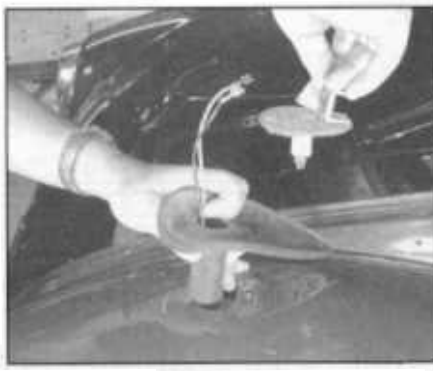
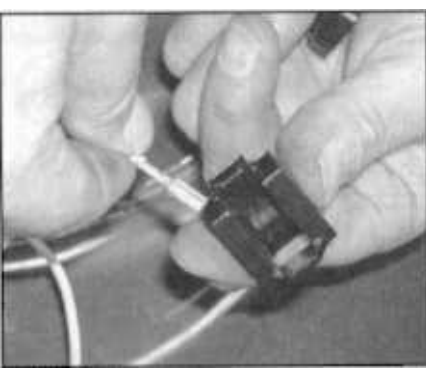
across the rear firewall, to the right side of the car (for the right turn signal, license plate, and brake lights), a heavy red (with black strip) wire is routed through a fire-wall lower access hole, under the rear parcel floor, and to the starter solenoid.

with the look of the finished layout. It may look daunting at first, but once you begin to separate the different colored wires, and figure out the fuse panel layout (by process of elimination), things will then begin to make sense.

When it comes to wiring the engine compartment, the factory tar boards must be removed, as much of the wiring is hidden behind them. The main harness goes

Without a doubt, the most time-consuming, brain-draining portion of this task is wiring the fuse panel (where most of the wires come together). Plan on spending a few hours organizing, routing, and locating all of these wires before you are satisfied

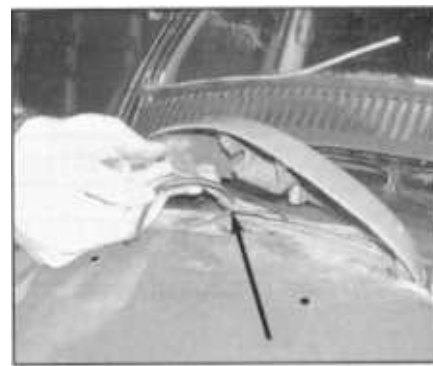
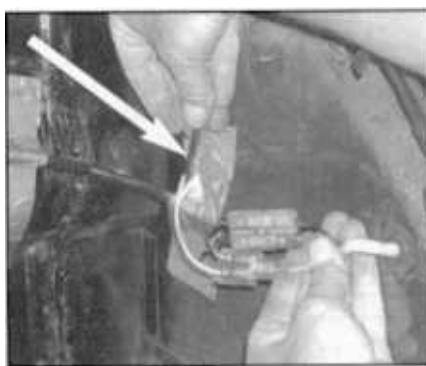
In designing a replacement wiring harness, Wiring Works decided to make a few small "improvements" to the fuse panel wiring. The original factory design omits a fuse within the front park light circuit (which can



New-style headlight socket housings are designed to work with common push-on connectors, unlike the original Hella units. Make sure your wiring harness routing is correct, before inserting these connectors. ABOVE CENTER, once the turn signal wires are pulled through the boot, assemble everything, wiring first, then place the bulb holders on top, and add nuts from underneath. ABOVE RIGHT, we found it easier to wire the wiper motor to the switch, on the bench, before installing them in the car.



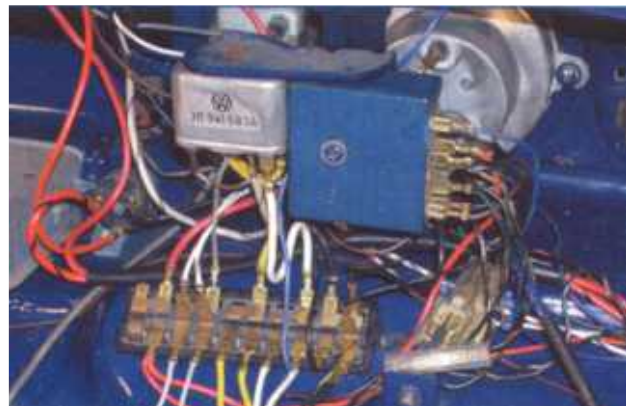
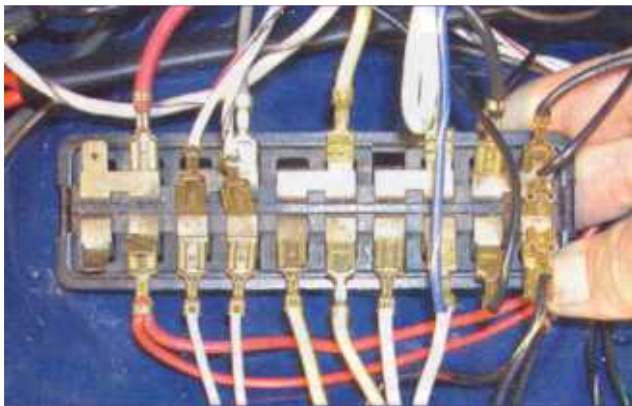
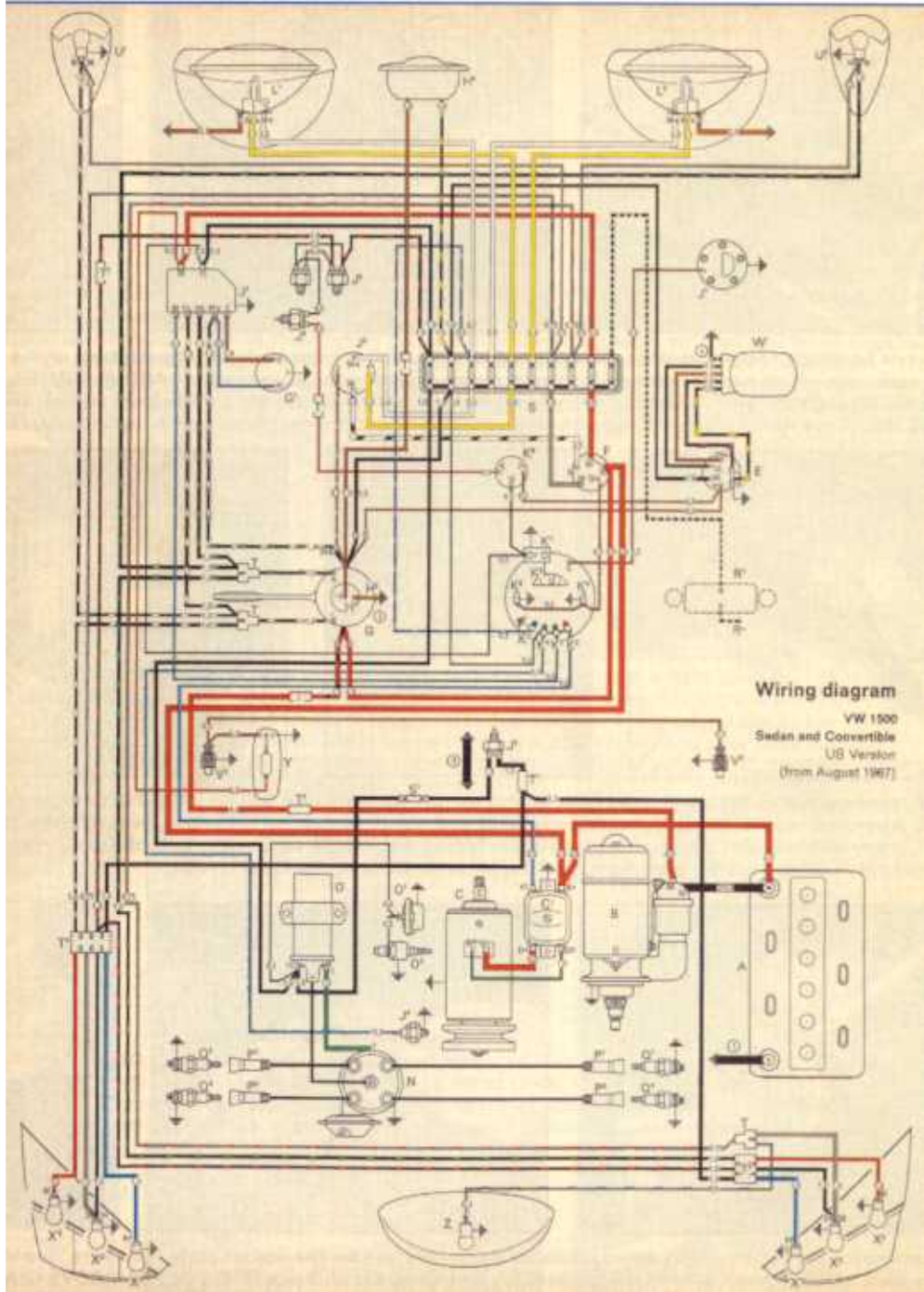
Rocky Jennings makes this must-have dash tool to tighten the switches. ABOVE CENTER, to grab the dome light/door jamb switch wires, we used a length of welding rod, bent at the end, to capture the wires, and pull them through the panel. ABOVE RIGHT, many of the engine compartment wires are hidden behind the tar boards. With these removed, we installed the wires for the right side taillight, license plate light, and starter solenoid main lead (see arrow).



Connection for the right taillight also doubles as the connection for the license plate light wire (see white arrow). Wire continues up the back of the firewall (behind the tar boards), and along the backside of the decklid. ABOVE CENTER, license plate light wire passes through a small hole (hidden behind the light hood), goes through the rubber gasket (black arrow), and to the light socket. ABOVE RIGHT, to correctly wire the taillight, we referred to the Bentley repair manual for proper installation.



Once the main wiring harness has been installed, and the tar boards replaced, the engine can go back in and get fully hooked-up and wired. Black wire goes to the (#15) side of the coil, blue-green wire goes to the oil pressure switch, large red to the (D+) side of generator, while green goes to the (DF) side. If you have a later-style generator, with screw-on terminals, you will need to change these two wire ends, or find adapters. ABOVE RIGHT, main harness hot lead (+) comes directly from battery to regulator (B+). Route this wire in such a way to protect it from coming in contact with the metal framework of the rear seat assembly.



TOP, here's the master wiring diagram for a 1967 sedan (thanks to Robert Bentley Publishers). It's a great guide that will help you tackle this tricky job. ABOVE, a look at the finished wiring job, and the ten-fuse panel used on the '67 Bug. Fuse panel shows modified wiring method used for fused park light application (park lights will remain lit when headlights are on). ABOVE RIGHT, this is what Morley's car looks like after we completed our rewiring. Clean, neat, color-coded and ready for years of use.

lead to fried wires or a light switch failure). So, there will be a few subtle changes noted in the way Wiring Works made this addition (as compared to the factory diagram), including omitting a green wire that runs to the light switch (terminal #57), since these lights will stay lit even when the headlights are turned on. I guess, if you must have it the old fashion way (without a fuse), you can easily go by the factory Robert Bentley wiring diagram as a guide, just save your old green wire. Either way, having a color wiring diagram, with the terminal numbers, wire sizes (shown in millimeters<sup>2</sup>) and components, does wonders for figuring all this complex stuff out.

Variations can also be seen depending on the origin of your electrical components. For example, the original generator came with push-on terminals, while today's replacement generators come only with screw-on posts. Replacement light and wiper switches don't always have the same exact number of terminals as before, and turn signal/flasher relays vary - not only in design, but in how they mark their terminals (KBL, K or BL are the same). The brown ground wire from the turn signal lever assembly was originally hooked to the #31 terminal on the wiper switch, but it's more common nowadays to ground it at one of the speedometer mounting screws, using a spade adapter.

Included in this wiring harness kit is nearly every wire you'll need (all color-coded, cut to length, wire ends attached, and sheathed), along with a number of necessary couplers, headlight plugs, grommets, and detailed instructions. What is not included, and should be seriously considered at the time of purchase, is a new 10-fuse panel (a must!), any switches, turn signal lever assembly, bulb and bulb holders, horn, rubber dust boots, and voltage regulator. While the kit does contain some generic grommets, finding factory parts (good used, or NOS), makes for a better appearing finish job.

## **SOURCE**

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**Wiring Works**  
2805 Kerckhoff Ave.  
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(Wiring harness manufacturer)

**Robert Bentley Publishers**  
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