

Wagonmeister

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Wagonmeister High Voltage & Conversion Headlight Harnesses Installation Tips and Suggestions

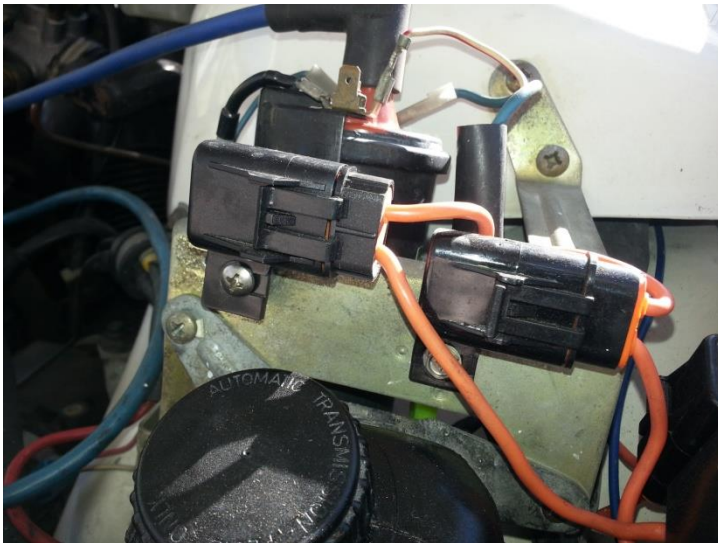
All harnesses are shipped ready to install. Little is required in terms of assembly. The plugs for the headlights, and the plug for the system control, are intuitive, but are covered below. I do highly recommend that all rubber boots on headlights and housings be retained. Control plugs, that connect to your 240's original headlight plug, can be sealed or insulated to protect against moisture. I usually tuck the control connection under the battery tray support platform.

Power Supply:

All Wagonmeister harnesses come with two, water-tite fuse holders for blade style fuses. They are rated 25-30 amp. I've yet to find a setup that will blow a 20 amp fuse, so that's what I use. The wires on the fuse holders are sized to reach the main junction block when they are mounted near it. I like to put them on the coil bracket. Several options are shown here.



Picture on the left is very tidy, includes a relay for fog lamps. Picture on the right only for fuse holder location, as the relay pack is from an earlier version of the harness. Picture 3, below, from a customer's installation. Extensions for power wires are included.



Fuse holders mounted above the power steering reservoir is easy. Wires should have been left a tad longer.

Routing of the power supply leads to the fuse holders is left to the installer's taste. For my own wagon, I ran right to the battery cable, as my electrical junction box is already "full":



In-line plug allows power to be disconnected without disconnecting from the battery terminal.

More common, the leads run to the junction box. When I do this I join the two and use a 1/2" female spade connector. There is a terminal in the junction box to accept that.



Two, separate female spade connectors inside the junction box in this example.

Relay Pack Installation:

Once again, the harness allows for considerable flexibility . We have found that most of the earlier cars have two holes in the side of the radiator core support that are, coincidentally, the correct spacing for this location:



Aforementioned holes not there? Later cars don't have them. Self-drilling sheet metal screws will do the trick. Pay attention to where you drill! Check the other side first.

When I mount here, I usually put a machine screw in from the front of the core support. Then a washer and a nut. Then another washer, and finally the relay and an acorn nut. This makes it easy to remove the relays for replacement.

The insulated harness at the top of this picture is not related to the headlights—that's a condenser fan run.

Connecting the control circuit for the harness

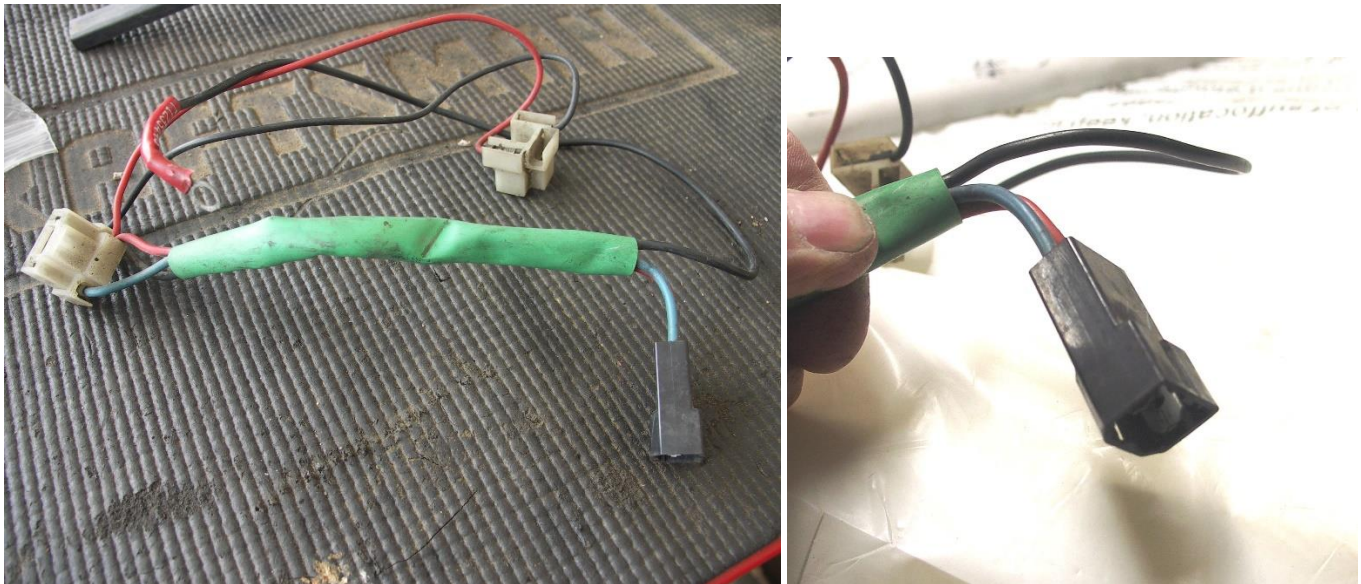
The purpose of your Wagonmeister headlight harness is threefold. First, it provides voltage directly to the headlights, without the long, factory run, all the way into the cabin. Early cars, up to 1985, run the headlight power through the headlight switch with no relay. 86-90 cars have a headlight relay, in the cabin, up under the dash, by the firewall. For '91, Volvo relocated the headlight relay under the dashboard center AC vents—very inconvenient! All of these result in significant voltage drop, as the power has to travel so far to get to the lights.

Next, a significant advantage to the harnesses is elimination of the common problem with either headlight switch plugs, or relay plugs, deforming, due to heat from the high draw of the headlight circuits. The plugs can deform enough to fall off, leaving you without lights, not to mention the fire hazard from melted or shorting wires.

Finally, with the power to the headlights being switched directly to them, at the front of the car, you can run higher wattage bulbs without risking melted wires and plugs at the headlight switch or relay. The original headlight wiring now ONLY controls the harness relays, which draw very little power. Here's how that happens:

Quad Rectangle (quad round, single round) Harness

Quad rectangle, quad round, and single round headlights all have a small, sub-harness, connected to the body harness, to get power to the headlights. Here's a quad rectangle sub-harness.



The small, black plug goes to the body harness. You'll find it down in the corner of the engine bay, where the core support meets the inner fender well, both sides.

Quad rectangle harnesses have a male, H-4 style control plug:



Plug this into the LOW BEAM female plug of your car's sub-harness, on the left side of the car. Don't see the sub-harness? From the factory, there is a weather panel behind your headlight setup, that covers the back of the sealed beams. You will have to remove the headlight unit, to remove the weather panel and pull the sub-harness back into the engine bay. Your sub-harness is in FRONT of that panel. The NEW headlight plugs of your harness will then run through the cutout in the weather panel, to your headlights. We recommend you replace the weather panel when you reinstall the headlight unit. Once you have the control plug attached to your sub-harness, you can tuck that away under the battery tray.

NOTE: The Quad light harnesses are wired for H4 bulbs. While the plugs look just like sealed beam plugs, the wires are NOT in the same positions.

You will find an identical, small black plug and sub-harness on the right side. You can completely remove that; it will not be used.

The wiring to the far side of the car is designed to exit the engine bay via the various holes in the core support below the left headlight. Grommet or other protection is recommended, even though the harness is in plastic sheathing.

A dedicated ground for each side is wired into the harness. Right side grounds to the point behind the washer bottle bracket. Left side usually found on the metal rail where the headlight dimmer relay is mounted.

E-Code and 9004 Harnesses, Control Circuit

In the US, what we call the “Cinder Block”, plastic-lensed headlights, use a 9004 bulb and plug. That plug looks like this:



The harnesses have a special connector on them to accept that plug, that looks like this:



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The headlight plugs are integral to the body harness. No little black plug down in the corner. No weather plates behind the headlights. Attach these two plugs together.



On the passenger side, you will, once again, have an unused plug for both E-code and 9004 harnesses. Since it cannot be removed, we recommend sealing it. A broom handle holder works perfectly for this. Available at hardware stores, or McMaster.com



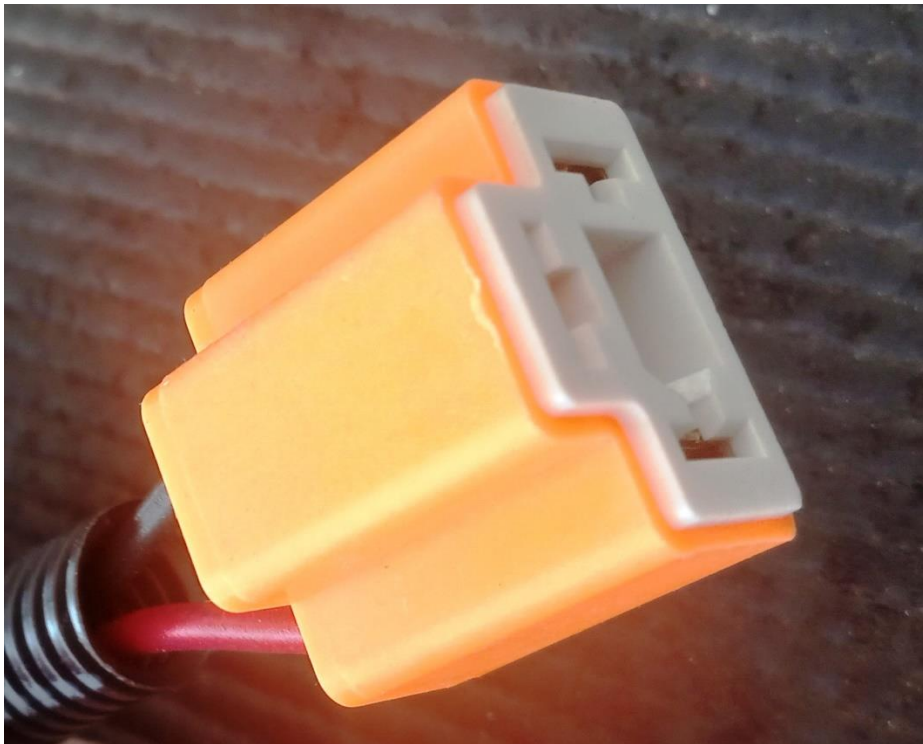
You can glue it, or cable-tie it in place on the unused right-side plug.

9004 harnesses come with headlight plugs that look like the originals,



as the style of bulb is not changing, only the wattage.

E-code harnesses come with H4 plugs for the standard H4 bulbs used in glass, E-code headlights.



As with the quad rectangle harness, run the right-side headlight wiring out the core support via one of the openings, across the front apron, and back into the engine bay on the far side. Connect the ground and headlight plug there.

We recommend Hella H4 bulbs for your quad light conversion, and E-codes. Excellent quality. 80/100 bulbs are recommended. We do NOT recommend running higher wattage. The relays are rated to handle 90/130 bulbs, but the life of all the components may be compromised.

As with all electrical modifications and equipment, inspect the wiring and connectors for corrosion, and also for damage from abrasion, rodents—anything that may cause wiring to overload or short circuit--regularly. Any wiring modification should be checked at least once a year, if not more often. Wagonmeister warrants the harnesses for defects in workmanship and faulty parts only, and is not responsible for malfunction or failure of harnesses that have been damaged by incorrect installation, or misuse. Modification of any harness for custom installation voids all warranties. We offer custom harnesses for installations not covered by stocked harnesses.

Enjoy your improved lighting, and please watch our website for new items.

Thanks for purchasing Wagonmeister products!