

HELLA SUPERTONE HORNS IN A HYUNDAI ELANTRA:

Solving the 'WIMPY HORN' Factor on the (1996-2000) Hyundai Elantra GLS

By Kalikiano Kalei, 2014

As much as I otherwise love my little 1996 Elantra GLS station wagon, one aspect of it that has never been fully satisfactory has been the absolutely *wimpy* sound of the single electro-magnetic diaphragm type horn it was OEM equipped with. Why Hyundai has chosen to give the Elantra one of the most totally *disregardable* horns ever installed in a smaller vehicle (and a single horn instead of the usual two, at that!) is a great mystery that I can't even begin to fathom. For some reason, as a number of others have noted in other auto forum venues, the industry rule seems to be that smaller the car, the wimpier its horn generally is (whereas it *should* be the other way round: smaller cars should have BIGGER horns to be able to draw the attention of today's *s**t-for-brains* drivers).

Fortunately, this painful deficit seems to have bothered many other Hyundai owners (and owners of many other small Asian-make automobiles similarly afflicted, as well) with the result that there are a number of related commentaries on the subject viewable here and there on the internet.

That said, the single stock horn on my 1996 model GLS wagon is, to be sure, nothing short of a complete *embarrassment*. Not that I believe in or advocate aggressive use of horns, since most users of horns seem to honk with *rude intent* (think of it as a sonic middle finger...). One needs to remember that a horn should be used conservatively *as a defensive safety device*. At any rate, I've sometimes found myself thinking it almost better to suffer a near-crash in silence than expose myself as the laughing stock of the freeway with my car's puny little horn and its barely audible "*meep-meep!*" sound.

As an aerospace life support and safety person, safety has always been a BIG item on my various agendas, so after much cogitation I finally decided to replace that pathetic single horn on my beloved '96 Elantra with something a bit more gutsy! After briefly fantasizing about a commercial grade semi-truck & trailer air horn (with perhaps a *second* one installed facing rearwards, to blow away those annoying people who lay on their horns from behind when you don't leave a stoplight fast enough to please them), discretion got the better of me and I started to research the subject in a more constructively balanced, less emotional manner.

I soon found out that a range of opinions exists on what to buy and install as a replacement horn. Some advocate compact (folded) airhorns (such as the *'Nautilus'*, by STEBEL), while others feel the so-called *'Freeway Blaster'* (by FIAMM) is a better solution. After much reading and sifting through of these opinions, I decided that the *universally* favored replacement seemed to be a set of the Hella **'Supertone' electro-magnetic diaphragm horns**. The two horn Hella set, consisting of one 'high tone' (500 Hz) and one 'low tone' horn (300 Hz), produces on average about 110 dB or so (Hella rates the output a tad too high at about 118 dB at 2 meters, compared to some actual measured outputs of about 110 dB or so...I'm going with the lower figure). That's still plenty of sound to get the attention of others on the freeway and the pleasingly harmonised dual-tone sound produced by the high and low horns together carries a note of polite, no-nonsense authoritative presence that readily gets attention without giving the impression that one is being rudely belligerent.

Back before the mid-1980s the Hella Supertone horns were manufactured solely in Germany, but since that time Hella has relocated their factory (for the manufacture of these items) to India, so that all you can find now are the Indian made horns (true as of February 2014). Hella swears that the Indian produced horns are absolutely the equal of the original German model in every respect, so don't sweat the aesthetic nuances and get yourself a set of these Hella Supertone horns anywhere on-line. The regular set comes with a Hella 12VDC automotive relay and the two horns only (plus a basic instruction schematic diagram); you'll also need to buy (separately) an in-line 30 amp fuse holder, a roll or two of black 12 gauge and red 12 gauge wire, plus a small number of automotive connectors (including standard spade-type and ring-type crimp-on automobile connectors, yellow coded specifically for use with 12 gauge wire).

I quickly found that the average price these days for the Hella two-horn set is about US\$ 55 or so. You might find a set priced a few dollars lower and you'll definitely find some that are higher, but don't pay more than about US\$55 on average. You can find these Hella horn packages easily on eBay, and they are also readily available through most on-line truck/automobile accessories businesses.

Now, as I remarked earlier, Hyundai in its infinite wisdom only gave the Elantra a single stock horn (despite the factory wiring manual showing a second horn...apparently an option?). On my 1996 (and I presume on subsequent Elantra model years up to about 2000), the single horn is located on the driver's left side front, in the recess almost directly behind and slightly below the left side parking light. Getting to it is therefore quite easy and you *do not* have to remove the front bumper, grill, or anything else to access it.

Before you begin to do anything in the way of removing the stock horn and installing a pair of Supertones, it is prudent to pause briefly and consider that Hyundai cars use what we call a 'positively connected' horn button circuit. This is in contrast to the less common 'negatively connected' system still used by a few manufacturers. Both HYUNDAI and KIA use the former (+)

system (as so most auto manufacturers), so when you look at the rudimentary schematic diagram provided with the Supertones, you want to focus on **diagram 2B** (ignore the other three diagrams that are illustrated). [You'd be surprised at how many people don't know about this basic difference in horn connection systems in use on automobiles. It may seem a bit perplexing at first, unless you know which system your car uses, since you can't install *squat* unless you determine this fact first.]

OK. Ready for surgery? The important first step is to remove the negative battery cable from its connection on the battery's (-) terminal; you don't want to short circuit something accidentally while installing these horns, of course.

The next step is to open the hood of the car and remove the single Philips head screw holding the left front parking light/turn signal in place and remove the lamp unit temporarily (I just let mine dangle by its wiring); look down into the recess below where the parking light is fitted and you'll see that offensive little travesty of a Roadrunner '*meep-meep*' horn bolted in place there.

Using a socket wrench and the appropriate sized socket remove the bolt holding the horn's mounting bracket from the left radiator support structure; then, after using some imagination and carefully studying the electrical connection at the back of the stock horn, remove the connector that hooks up to a single point of connection from a wiring harness. It's actually two wires, but the Hyundai OEM connector is one of the more modern 'unified' types, so it takes some dexterity and intelligence to determine how to get that blasted Hyundai plastic connector dislodged from its horn terminals. Once you've done so, however, you'll note that the two wires attached there are BROWN (or DARK GREEN) and BLUE. [Note: Interestingly, Europe and most of the rest of the auto world uses a different electrical color coding than we do in the US. Instead of the BLACK (+) wire and WHITE (-) wire system alternating current code we are familiar with, their hot AC lead wires are BROWN (ACL or positive line) and the negative wire is BLUE (ACN or negative line).] Next take some electrical tape and tape the blue connector wire off entirely (since you won't need it any more).

What you are going to do after that is prepare the two horns' wiring so that you can install the new horns without having to worry about connecting wires after they are in place. The ideal place to mount these horns is directly in front of the car's radiator, a spot where they'll be able to resonate and be heard. In order to do so, you'll need to remove the thin plastic fascia cover that spans the upper gap between the front bumper and the radiator...easily removed after 4 phillips head screws are undone.

Take a look at one of the Hella horns now. You'll notice that there's no obvious way of telling at a glance which is the (+) connector and which is the (-) connector, as they are both otherwise unmarked and both bronze in color. Probably the best guide to use here is the Hella basic wiring schematic. Since the horns come with their mounting bar attached, in diagram 2B you'll

note that with the mounting bracket in an UP position, *the positive lead seems to be the one closest to that bracket* (and the negative would be that one *farthest away from the arm...or downwards*).

Taking two lengths of black 12 gauge wire about 17 inches long, strip the ends (both ends on each wire), then crimp yellow FEMALE SPADE-TYPE connectors on ONE end of each wire. On the OTHER end of each wire, crimp on medium sized yellow RING-STYLE END CONNECTORS (for attachment via a bolt to the car's frame). You'll use these to attach the ground connection for the horns, using the two horn terminals you've identified as being negative.

Next, taking two equal lengths of red 12 GAUGE red wire, again strip both ends of each wire. To one end of each wire attach a yellow FEMALE SPADE TYPE connector; join the OTHER ends of these wires *together* with a suitable crimp-on yellow (12 gauge type) TUBULAR connector. The female spade type connectors will attach to the (+) terminal of each horn and the co-joined other ends will attach to a wire leading to the relay you'll install shortly. By the way, definitely use the Hella relay provided, since although your existing horn circuit may have enough amps to drive the new horns, you'll get far better response from an added relay that routes power directly to the horns when the horn button on your steering wheel is pressed. *USE THE RELAY!*

Next step is to figure out where you want to locate the relay, mindful of the need to keep it somewhat protected from weather effects (like rain). I mounted mine in the engine compartment, on the left side of the firewall. After that, refer to the two diagrams attached at the end of this procedure and cut two appropriate lengths of red 12 gauge wire and one very short length of black 12 gauge wire (only a few inches or so). One end of one of the two red 12 gauge wires will run from the relay's **#87 terminal** to the horns, so strip the ends and add a yellow (12 gauge type) female connector to the relay end. The other end you can strip and leave without a connector, since it will attach to the joined horn (+) tubular crimp-on connector. The second length of red 12 gauge wire will connect from the relay's **#30 terminal** to the battery's positive terminal (via an appropriate accessory connector). You'll need to splice in a 30 amp fuse holder to this battery wire somewhere along its length (you can use yellow 12 gauge crimp-on connectors for that purpose or simply use yellow 12 gauge type tube type connectors to splice it in). The distal end of that second red wire (from #30 terminal) will connect to the **battery's positive (+) terminal**.

After that, take a suitable length of 16 gauge wire (preferably some color other than red or black) and add a crimp-on female connector at both ends. This wire will run from that BROWN (or DRK GREEN) horn (+) wire originally hooked up to the stock horn to the **#86 terminal** on the relay, since that is the steering wheel horn-button switch wire.

Final step will be to take that very short length of black 12 gauge wire you cut earlier and add a female terminal at one end and a ring-type connector at the other. The female end will hook up

to the **#85 terminal** and the ring-connector can be grounded to frame sheet metal holding the relay in place (see diagrams) with a bolt or screw.

At this point, bolt the two new horns securely to the central vertical metal support directly in front of the radiator (with wires already connected as in above steps) and reinstall the thin plastic fascia cover you previously removed to mount the new horns. This pretty much completes the whole process and it presupposes that you have some limited experience and basic familiarity with the simple principles of automotive electricals and are already comfortable with small “do-it-yourself” type projects on cars. If you have no such experience at all, get a suitably experienced friend to perform this installation. Offer him a few good beers for the favor (see illustrated advice at end of this paper).

Last and not least, reconnect the battery’s ground cable (-) to the battery’s negative (-) terminal. Now you’re ready for a test and I promise the results will be rather dramatic! No more cartoon Roadrunner type ‘meep-meep’ sounds, but rather a briskly appealing stock Porsche 911 type sound. Loud enough to get you noticed w/o being misconstrued as being deliberately belligerent by the thin-skinned (or numb-skulled).

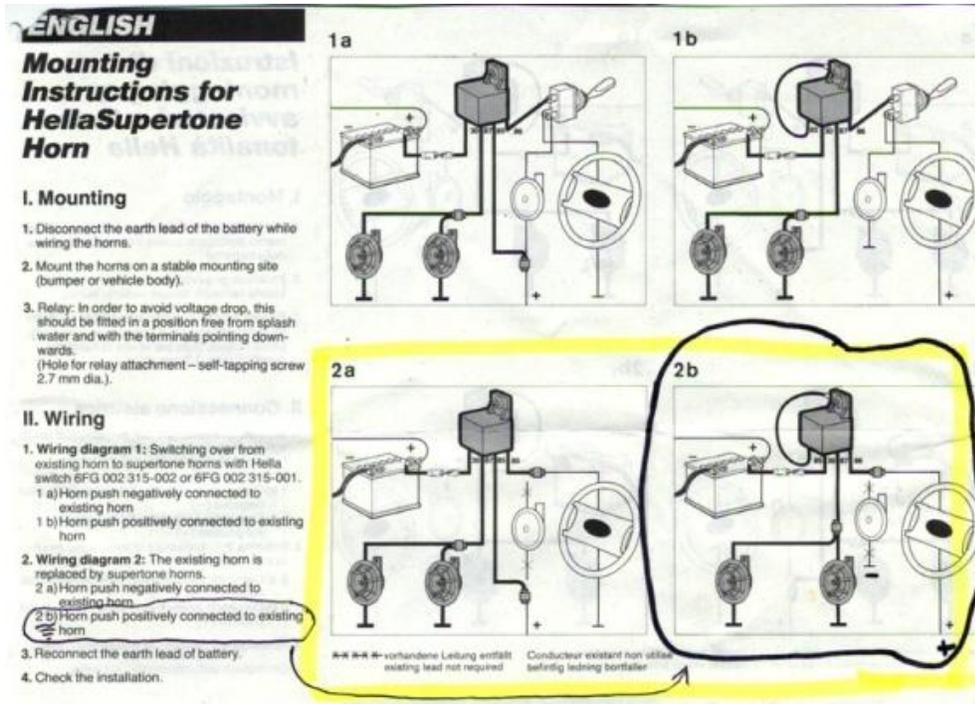
Just a reminder here that courtesy protocols on the road require a friendly ‘tap-tap’ on the horn button for anything short of a real screaming emergency! An inoffensive ‘beep-beep’ sound serves to alert others and signifies attention is needed, whereas laying on a horn (any horn, even a diesel locomotive horn) is usually very bad manners indeed. [And yes, I am old enough and mature enough to acknowledge the need for good manners in our daily interactions with others.] Nowadays, acting impulsively (like a clueless little twit) with a horn might get you the wrong sort of attention (namely a gang-banger who is carrying *heat* or is otherwise eager to do you some bodily harm if he feels he is being rudely ‘dissed’). Road-rage is a very, very bad thing to get caught up in, in any way, shape or form, and is *NEVER* productive, no matter how justified you may feel in reacting indignantly to someone’s jerky behavior on the highway.

Given the number of clueless *s**theads* behind car wheels these days (at least in the Great State of Californica), it sometimes takes immense restraint to refrain from inciting further unpleasantness by reacting impulsively to jerks, but it is after all the mature and responsible thing to do. Sadly, so often in our rude and obnoxious American road culture, immaturity seems to rule and no one ever said it was easy to keep from reacting to such things, despite the fact that an average person will now experience something like this at least *once* during any excursion onto a freeway (and likely a lot more frequently in some parts of the country...like LA).

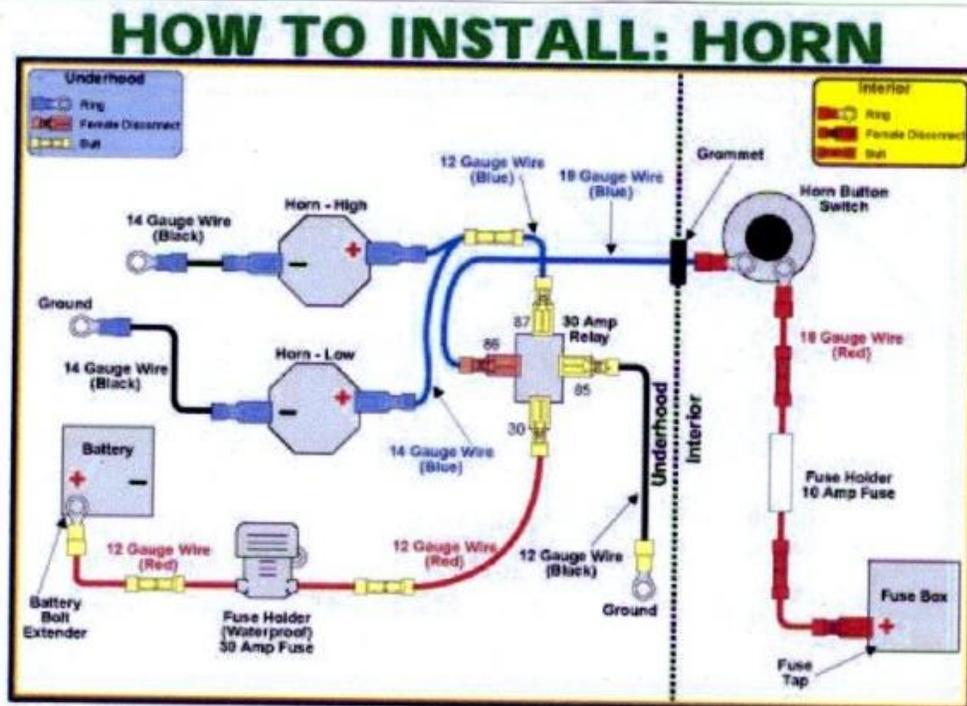
In summary, you’ve now overcome the quintessential, congenital Hyundai horn dilemma and you may beep with pride (as appropriate!). *No more wimpy Casper Milquetoast on wheels!* [HOORAY!]

Now go have a bottle of something good (like some Hawaiian *Primo* or German *Spatenbrau* beer) and congratulate yourself on having righted Hyundai's shameful oversight.

 Wiring schematic Nr. 1 (Hella basic schematic provided with their two-horn kit):



Wiring schematic #2, general schematic showing typical HYUNDAI/KIA horn hook-up.



Not a wiring schematic, but of excellent assistance nevertheless (*dis foh da aftas, brah*):



or

