

Stebel Air Horn Installation

Transforming A Meek Peeper Into A Master Blaster

by Moshe K. Levy



The Stebel Compact Nautilus Air Horn on the left is only about an inch wider than the stock Bosch unit on the right.

THE QUALITY OF stock horns varies widely from manufacturer to manufacturer, and even from model to model. While a horn, in and of itself, is not something a rider should rely on to avoid trouble, it can serve a useful purpose in certain situations, especially during rush hour commutes.

Moto-commuters know that a wimpy horn barely registers on car drivers' auditory radar screens, as they sit in their well-insulated interiors listening to radios, yammering on cell phones, arguing with their toddlers or otherwise being just plain distracted. Indeed, when your fellow drivers need to be jogged into the moment, a

loud horn is just the ticket. Many (if not most) stock horns found on today's motorcycles are meek, and we must turn to the aftermarket and use some ingenuity to find solutions that work.

The idea here was to create an affordable, reliable horn setup that would install easily in accessible locations, and of course outperform the stock horn. In addition, the solution should be as universally applicable as possible. All of these factors are often at odds with each other, but in this case, the idea translated quite well into reality.

Test Setup

As a test mule, I used my daily commuter vehicle, a 2004 BMW R1150RT. This RT arrived stock with a pair of fairly powerful Bosch horns and its components are somewhat densely packed underneath its plastic bodywork. If the newly devised system could be made to fit here, it could fit nearly anywhere.

An online search for a compact, inexpensive, and dependable air horn yielded a fair number of results, but none as promising as Stebel's Nautilus Compact Dual Tone Air Horn, at about \$37. This Italian-made 139 dB blaster, totally self-contained and barely larger than the RT's conventional stock Bosch unit (Figure 1), was dr. flash gordon's holiday recommendation and was also favored on various Internet forums. I ordered two of them, in hopes of a clean swap from stock.

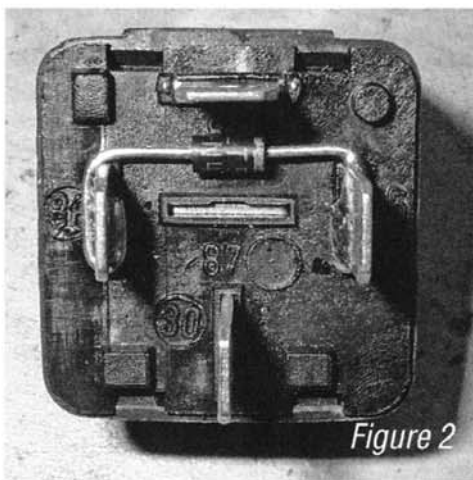
The Stebel Horns And Relays

Each air horn arrived in a neatly packaged box containing the horn, mounting hardware, mounting block, adapter for routing the air intake away from dirty or wet areas (if applicable), and one 12 VDC, 30 A Bosch-style relay. The relay was of particular importance, since not all motorcycles come standard with relays installed for the stock horns.

Relays allow a low-current control circuit (small wires) to make or break an isolated high-current circuit (heavy wires), like in your bike's starter motor circuit. Since the initial current to power up an air horn's compressor is quite a bit higher than a stock horn's starting current, isolating the bike's switchgear and wiring harness via a relay ensures that nothing gets fried. So when in doubt, add the relay!

Relay Diode Modification

A diode is the electrical equivalent of a valve, permitting current flow in only one direction. The relay included with each horn did not have a diode across its coil, but ideally it should. In this particular case, when the voltage source is removed from the relay coil (as the horn switch is released), an enormous voltage spike as high as 1000 V can occur. This spike can cause insulation breakdowns elsewhere in the circuit's wiring harness, or damage the horn switch itself. By connecting a 10¢ 1 A 100 V diode across the relay's coil, a "roadblock" is created which eliminates



A 1N4003 Diode soldered across the coil terminals of the Stebel's 12 V 30 A relay will prevent any dangerous voltage spikes.

