

Big Warmth on a Small Bike in Winter

SALES OF SMALL motorcycles have been booming in the U.S. Their low prices, excellent fuel economy, playful aesthetics, and sheer riding pleasure make minibikes irresistible. My 2021 Honda Trail 125 is so addictive that I find myself hopping aboard its spartan solo saddle not just for local chores but for longer weekend trips as well.

However, all that fun eventually collides against the limitations Mother Nature imposes on those of us who suffer cold winters. Normally, on my big bikes, I just plug in my 12-volt electric jacket liner and gloves and keep on going. But on small bikes like the Trail, there simply isn't enough electrical capacity to run a full suite of heated gear.

Since parking the bike for the season is never a serious consideration for me, I developed a solution that is relatively low cost, readily available, functionally effective, and applicable for virtually any motorcycle with a marginal electrical output.

First, you need some battery-powered heated gear, which is abundant in today's marketplace. I've had excellent luck with Warm & Safe's Long Sleeve Heat Layer Shirt, which is powered by a 7.4V, 7.8Ah lithium-ion battery. For gloves, I like Klim's battery-powered Hardanger HTDs, which operate on 7.4V, 2Ah lithium-polymer batteries. Both products feature multiple heat levels that allow the rider to adjust temperature as necessary, and they have held up well over multiple seasons of abuse.

Indeed, heated gear is the only thing permitting your faithful, winter-hating Mediterranean columnist to survive arctic riding – at least until the batteries deplete! And therein lies the rub: To stay out all day in the cold, we need continuous power. Here's how to get it.

First, we need spare batteries for all the heated gear we use. Manufacturers generally offer spares, as does Amazon. Always try to get at least as high an Ah (amp-hour) rating as the original battery – preferably higher. The higher the Ah rating, all else equal, the more run time you will get.

Next, we need to keep these spares continuously charging so they can be swapped in when the original batteries run down. We can accomplish this with a basic square-wave DC-AC inverter and a wiring harness to connect the inverter to the bike's battery.

My typical setup inside my Trail's top box is shown in the photo at right:

- 1.** Sinlool waterproof cigarette lighter harness, available on Amazon for \$9.99, which connects directly to the motorcycle's battery
- 2.** BMK 200W square-wave DC-AC inverter, available on Amazon for \$25.99, which plugs into the Sinlool harness and converts the 12V DC from the bike's battery to 120V AC

- 3.** AC-DC battery chargers, included with the heated gear and plugged directly into the inverter, which convert the 120V AC output back to 8.4V DC to charge the spares

- 4.** Spare lithium-ion battery for my W&S Heat Layer Shirt

- 5.** Spare lithium-polymer batteries used in my Klim heated gloves

Both the harness and inverter are generic, and it really doesn't matter which brands you use. (Some riders might already have the wiring harness in place, e.g., for a Battery Tender.)

Everything is secured in my Trail's top case so things don't shake around too much. All I need to do is flip the inverter to "on" to continuously charge the spare batteries while riding. Yes, it's inefficient to convert power from the bike's 12V DC to 120V AC and then back to heated gear's 8.4V DC charging voltage, but this setup gets the job done with common, inexpensive components and requires no fancy wiring.

Total draw on this setup is only about 32 watts, including inverter losses. That's only about one-third of the draw of my 12V DC Warm & Safe jacket liner, so minibikes and even many older bikes with limited electrical capacity should be able to handle this load with ease. Mission accomplished!

Depending on the ambient temperatures and settings of the heated gear, I typically pull over every one to four hours to swap the dead batteries for freshly charged ones, allowing me to stay out all day in the cold – long after most other riders have parked for the season. For a true addict, there is no other choice!

To see a video about this setup, visit [YouTube.com](https://www.youtube.com) and search for "Moto Mouth Moshe." 

